

# OTC

## MAINTENANCE TOOLS



**CATALOGUE No 32**

**OWATONNA TOOL CO.**

**OWATONNA, MINN.**

# TOOLS



# oTc Guarantee

oTc Tools are guaranteed against defects in material and workmanship. Claims should be submitted to our factory for test and determination of defects.

All oTc Tools are guaranteed to do the job for which they are built, in a satisfactory manner. Any tool which has proven to be defective will be replaced free of charge provided it has not been abused, improperly ground or heated, or otherwise mistreated.

Service on oTc Tools is offered at any time during the life of our tools at a cost to the user covering only material and labor necessary to recondition.

**OWATONNA TOOL COMPANY**

Owatonna, Minnesota

*All Prices Are Net To The Trade*

**WITHIN THE UNITED STATES**

**WE PAY POSTAGE**

On All "PAID IN ADVANCE" Orders

Postage  
Will Be Paid  
by  
Addressee

No  
Postage Stamp  
Necessary If  
Mailed in the  
United States

## BUSINESS REPLY CARD

First Class Permit No. 72A, Sec. 510 P.L.&R.

Owatonna, Minn.

**OWATONNA TOOL CO.**

**OWATONNA,**

**MINNESOTA**

Postage  
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by  
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First Class Permit No. 72A, Sec. 510 P.L.&R.

Owatonna, Minn.

**OWATONNA TOOL CO.**

**OWATONNA,**

**MINNESOTA**



**Owatonna Tool Co., Owatonna, Minnesota**

PLEASE SHIP AT ONCE THE FOLLOWING  
O. T. C. TOOLS—PARCEL POST—C. O. D.

NAME

STREET

CITY

STATE

NUMBER & NAME OF TOOL.

PRICE

TOTAL

**WE PAY POSTAGE** ON ALL "PAID-IN-  
ADVANCE" ORDERS

Your o'te Salesman will get full credit for this order.

32

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32





## FOREWORD

For the approval of automotive and industrial maintenance men the Owatonna Tool Company offers the most complete line of finely designed, quality tools on the market today.

Ever alert to take advantage of every discovery and development in metallurgy, the best alloy steels obtainable are used. Advanced methods of manufacturing permit the most economical and practical designs, while scientific heat-treating processes produce tools of uniform strength and durability. No manufacturing expense is spared to produce a line consistent with the reputation for quality which oTc tools have enjoyed for the past seventeen years.

In this latest edition of our catalogue we have endeavored to present a complete line from which oTc users can fill all of their hand tool requirements. In addition to a wide range of hand tools, a great many tools for industrial maintenance and service tools for tractors and trucks will be found. These tools have been designed to reduce working time and to permit greater accessibility. Special tools are announced only after thorough tests have been made and the tool found satisfactory in every respect.

oTc tools are built for maintenance men who appreciate good tools and who are not satisfied with something "just as good." Since the mechanic is judged by the tools he uses, he can afford to use only the best. The oTc trade mark is your assurance of superiority in design, material and workmanship. In oTc tools we guarantee, and you can expect, long life, practical utility and unfailing service.

**All Prices Are Net—Subject to Change Without Notice**

Printed in U. S. A.



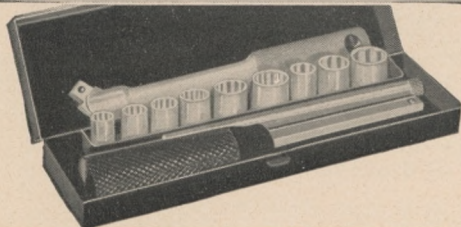
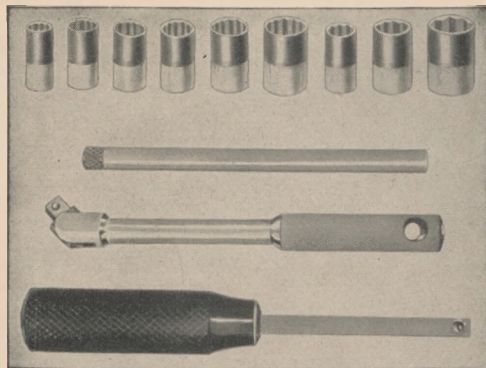
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## Midget Socket Set

1/4" Square Drive



### 12 Point Sockets

No.	Size	Price
M-8	1/4"	\$0.35
M-9	5/32"	.35
M-10	1/8"	.35
M-11	3/16"	.35
M-12	3/8"	.35
M-14	7/16"	.35

### 8 Point Sockets

No.	Size	Price
S-8	1/4"	\$0.35
S-10	5/16"	.35
S-12	3/8"	.35

H-75 Midget Flex  
Handle, 5" long .....\$1.30

H-78 Midget Ignition  
Handle, 5 1/2" long ..... .60

H-90—Midget Box ..... .50

This set is handy for all electrical, ignition and carburetor work and can be adapted for use on radios and electric refrigerators.

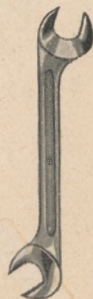
The M-81 set contains six twelve point sockets, three eight point sockets, the H-75 Flex Handle with Tee Bar, the H-78 Ignition Handle in the H-90 box as illustrated.

No. M-81—Midget Set, complete in box (as illustrated) .....\$5.55

## Otc Ignition Wrenches

These midget wrenches are for use on magnetos, distributors, and other electrical work. Different openings on each end, yet each size is duplicated on a separate wrench at a different angle to meet all conditions. Drop forged.

Item No.	Openings		Head Thickness	What They Take	Price
5	13/32"	5/16"	5/16"	Auto Lite	\$0.45
6	15/32"	13/32"	5/16"	Bosch	.45
7	7/32"	1/4"	7/16"	Delco	.45
8	1/4"	3/32"	5/16"	Remy	.45
9	3/32"	1/16"	1/8"	Eiseman	.50
10	1/16"	3/32"	1/8"	Remy	.50
11	11/32"	3/8"	3/4"	German Bosch	.55
12	3/8"	1/2"	3/4"	General	.55
M-8—Set of 8 Wrenches .....					\$3.90







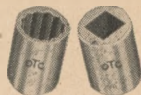
## Junior 12 Point Sockets

$\frac{3}{8}$ " Square Drive

Because of their design, exceptionally thin walls, light weight and great strength, these Junior Sockets and Handles have proven to be extremely popular with all classes of mechanics. They are ideally suited for work on crank cases, manifold nuts and all light fast work in inaccessible places on Trucks and Tractors as well as on all makes of passenger cars.

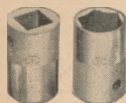
Hot forged from Chrome Vanadium steel the Sockets are accurate as to size and short enough to make a close coupled wrench when used with the Junior Handles.

No.	Opening	Price	No.	Opening	Price
212	$\frac{3}{8}$ "	\$0.40	218	$\frac{1}{16}$ "	\$0.40
214	$\frac{7}{16}$ "	.40	220	$\frac{5}{8}$ "	.40
215	$\frac{1}{2}$ "	.40	222	$\frac{11}{16}$ "	.45
216	$\frac{9}{16}$ "	.40	224	$\frac{3}{4}$ "	.45



## Junior Hexagon Sockets

$\frac{3}{8}$ " Square Drive



Now it is possible to obtain the popular oTc Junior Sockets in the Hexagon openings. Due to their straight thin walls and their exceptional strength these little sockets have become increasingly popular with all classes of maintenance men.

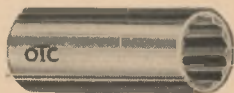
Particularly on crankcase and starter work where sockets wear out quickly the hexagon openings are practical and every bit as efficient. They are furnished in all sizes to fit the entire range of  $\frac{3}{8}$ " drive handles.

No.	Opening	Price	No.	Opening	Price
D-214	$\frac{7}{16}$ "	\$0.40	D-220	$\frac{5}{8}$ "	\$0.40
D-216	$\frac{1}{2}$ "	.40	D-222	$\frac{11}{16}$ "	.45
D-218	$\frac{9}{16}$ "	.40	D-224	$\frac{3}{4}$ "	.45

## oTc Deep Junior Sockets

$\frac{3}{8}$ " Square Drive

For use on Hexagon and Square nuts in running board channels, fender support, body bolt work and on piston pin locks. These 2" Junior Sockets are ideally suited to this work because of their extra length and thin walls.



### Twelve Point

No.	Opening	Price	No.	Opening	Price
L-212	$\frac{3}{8}$ "	\$0.50	L-224	$\frac{3}{4}$ "	\$0.70
L-214	$\frac{7}{16}$ "	.50	Eight Point		
L-216	$\frac{1}{2}$ "	.50	S-212	$\frac{3}{8}$ "	.55
L-218	$\frac{9}{16}$ "	.60	S-214	$\frac{7}{16}$ "	.55
L-220	$\frac{5}{8}$ "	.60	S-216	$\frac{1}{2}$ "	.60
L-222	$\frac{11}{16}$ "	.65			

## oTc Junior Universal Sockets

$\frac{3}{8}$ " Square Drive

These are the shortest coupled and thinnest walled universal sockets made and are a valuable addition to any mechanic's kit. Will work at nearly right angles. Just the thing for pan bolts, manifold nuts, carburetors, fly wheel housings, universal joint bolts, starters, generators, etc. Plated finish.



No.	Opening	Price	No.	Opening	Price
U-212	$\frac{3}{8}$ "	\$1.45	U-220	$\frac{5}{8}$ "	\$1.60
U-214	$\frac{7}{16}$ "	1.45	U-222	$\frac{11}{16}$ "	1.70
U-216	$\frac{1}{2}$ "	1.50	U-224	$\frac{3}{4}$ "	1.75
U-218	$\frac{11}{16}$ "	1.60			

## Special Oil Line Sockets

$\frac{3}{8}$ " Square Drive



For use on elbow-shaped fittings to eliminate distortion and damage to thin fittings which cannot safely be removed with an ordinary wrench. These fittings are found on fuel pumps, carburetor connections, gas and fuel pump lines, gas tanks, vacuum brakes, manifolds, automatic clutches, oil filters, etc.

These sockets have a  $\frac{3}{8}$ " square drive and can be used with any oTc Junior Handle listed on page 7.

No. J-214— $\frac{7}{16}$ "	Special Opening .....	\$0.50
No. J-216— $\frac{1}{2}$ "	Special Opening .....	.55
No. J-218— $\frac{11}{16}$ "	Special Opening .....	.60

## No. H-253 Universal Tee Handle

Same construction as Junior Tee Wrench but has Universal Joint and  $\frac{3}{8}$ " Square Drive. With a set of oTc Junior sockets this handle gives you a complete Universal Tee Wrench Set. 12" long.

H-253—Junior Universal Tee Wrench .....\$2.50

## oTc Junior Tee Handles

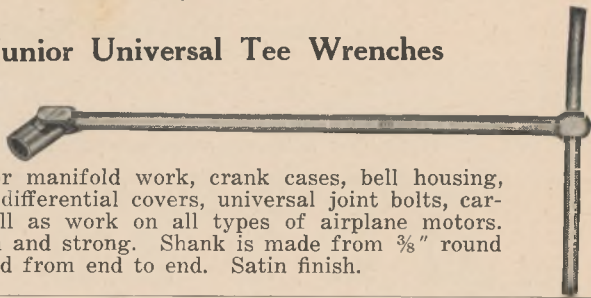
$\frac{3}{8}$ " Square Drive

oTc Junior Tee Handles are for use with either our Junior Sockets or Junior Universal Sockets. Strong and light. Plated finish.

H-251—Junior Tee Handle 10"	.....	\$1.25
H-252—Junior Tee Handle 20"	.....	1.65



## Otc Junior Universal Tee Wrenches



Especially good for manifold work, crank cases, bell housing, starters, generators, differential covers, universal joint bolts, carburetors, etc., as well as work on all types of airplane motors. Sockets are very thin and strong. Shank is made from  $\frac{3}{8}$ " round stock and heat treated from end to end. Satin finish.

Opening		12"		20"		Opening		12"		20"	
	No.	Price	No.	Price			No.	Price	No.	Price	
$\frac{3}{8}$ "	T-212	\$2.75	X-212	\$3.00		$\frac{5}{8}$ "	T-220	\$3.00	X-220	\$3.25	
$\frac{7}{16}$ "	T-214	2.75	X-214	3.00		$\frac{11}{16}$ "	T-222	3.00	X-222	3.25	
$\frac{1}{2}$ "	T-216	2.75	X-216	3.00		$\frac{3}{4}$ "	T-224	3.00	X-224	3.25	
$\frac{9}{16}$ "	T-218	2.75	X-218	3.00							

## Junior Flex Ratchet

$\frac{3}{8}$ " Square Drive

A 24 tooth ratchet with a flexible head that permits access to those hard-to-get at places. It combines the advantage of the Flex Handle with those of the ratchet. Sturdily built, it operates freely and is an indispensable tool in any service man's kit. The Otc Junior Flex Ratchet is 8" long overall.



No. H-260—Flex Ratchet complete with plug .....\$3.25  
No. H-262—Ratchet Plug only ..... .35

## Junior Ratchet

$\frac{3}{8}$ " Square Drive

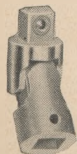


The Otc Junior Ratchet is one of the sturdiest ratchets on the market. It is completely enclosed to shut out grease and grit and to guarantee a smooth working, trouble free ratchet at all times. It has 24 teeth which provides an exceptionally short throw. The head is small and the tool is  $6\frac{1}{2}$ " long overall to provide sufficient leverage.

No. H-261—Junior Ratchet complete with plug .....\$2.70  
No. H-262—Junior Ratchet, plug only ..... .35

## Junior Universal Joint

$\frac{3}{8}$ " Square Drive



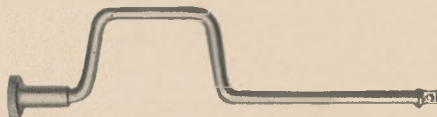
For use with either Speed Handles or Tee Handles the Junior Universal Joint fills a very definite need. The female connection is drilled to engage the compression ball on all handles and to prevent this part from falling off in close quarters. Only  $1\frac{1}{8}$ " long overall and breaks over at nearly right angles.

No. H-289—Junior Universal Joint .....\$1.50



## Junior Speed Handles

$\frac{3}{8}$ " Square Drive

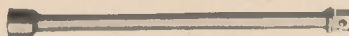


Junior Speed Handles have been exceptionally popular with the trade because they are light and easy to operate, yet are strong and withstand hard usage. They are heat-treated from end to end and the knob revolves on a steel ball which provides freedom of action and prevents sticking. Furnished in three lengths.

No. H-283—Junior Speed Handle, 15" long overall .....	\$1.25
No. H-282—Junior Speed Handle, 18" long overall .....	1.50
No. H-284—Junior Speed Handle, 28" long overall .....	2.00

## Junior Extensions

$\frac{3}{8}$ " Square Drive



O-T-C Junior Extensions are upset forged on each end, heat-treated overall and are rigid enough to prevent twisting or bending. Furnished in five popular lengths.

No. H-270—Extension, 1½" long .....	\$0.60
No. H-271—Extension, 3" long .....	.70
No. H-272—Extension, 6" long .....	.80
No. H-273—Extension, 10" long .....	.90
No. H-274—Junior Extension, 18" long .....	1.50

## Junior Sliding Tee

$\frac{3}{8}$ " Square Drive



Used with an extension or separately with a socket this handle is a popular one for all types of work. The head slides easily on the bar and makes this utility handle useful where other handles are not practical. 8" long overall and heat-treated from end to end.

No. H-287—Junior Sliding Tee Handle .....	\$1.00
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## O-T-C Junior Flex Handle



Hand forged from Chrome-Vanadium steel and heat treated to stand hard knocks and give perfect and satisfactory service. 8" long,  $\frac{3}{8}$ " square drive. Plated finish.

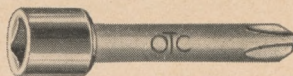
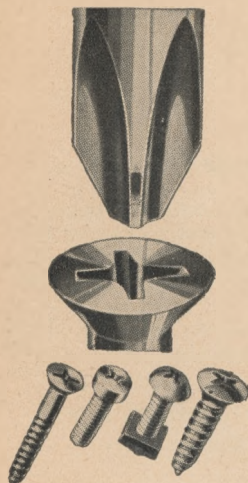
No. H-275—Junior Flex Handle .....	\$1.80
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## Screw Driver Attachments

Because of the many uses for Phillips screws on Automobiles, trucks, tractors and power equipment a complete line of attachments with  $\frac{1}{4}$ " and  $\frac{3}{8}$ " drive to fit the popular sizes of these screws are now available.

These attachments can be used with ratchets, speed handles or any other socket handle where speed is required.

One attachment to fit a No. 2 point is available in the  $\frac{1}{4}$ " drive. Three attachments to fit other size points are available in the  $\frac{3}{8}$ " drive. For  $\frac{1}{2}$ " drive attachments see page 14.



No.	Point Size	Overall Length	Drive	Price
H-76	2	2 "	$\frac{1}{4}$ "	.80
H-277	2	2 $\frac{5}{8}$ "	$\frac{3}{8}$ "	.90
H-278	3	2 $\frac{5}{8}$ "	$\frac{3}{8}$ "	.90
H-279	4	2 $\frac{5}{8}$ "	$\frac{3}{8}$ "	.90

## Special Screw Driver Attachments

### $\frac{3}{8}$ " Square Drive



Two special screw driver attachments are provided for use on Pontiac Steering brackets and Chevrolet water heaters. These screws have a butterfly or figure 8 slot and without a special driver it is impossible to remove or replace them.

These drivers are 3" long overall and thoroughly heat treated to give good service.

No. H-266—Screw Driver Attachment for Chevrolet Heater .....\$0.90

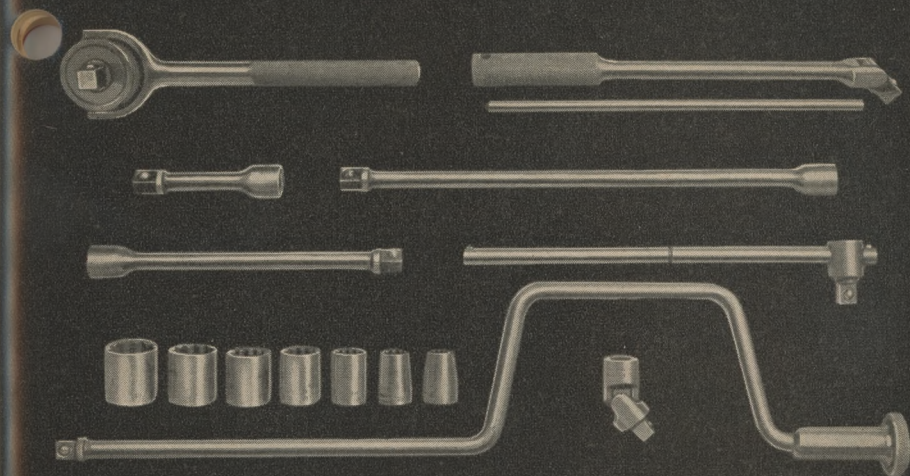
No. H-276—Screw Driver Attachment for Pontiac Steering Bracket ..... .90

## Screw Driver Attachment

A screw driver bit for use either with the OTC One-Hand Speeder or 15" Speed Handle. Can be used with any standard  $\frac{3}{8}$ " square connection handle. For speedier work and greater accessibility. 3" long over all— $\frac{1}{8}$ " bit.

No. 745—Screw Driver Attachment .....\$0.70



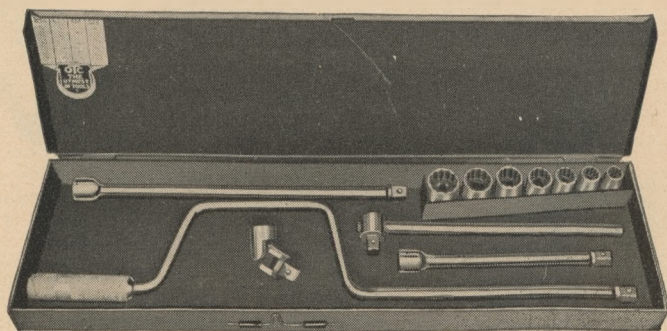


### No. SF-280 Junior Superflex Set

Consists of 14 units as pictured above:  $\frac{3}{8}$ "— $\frac{1}{16}$ "— $\frac{1}{2}$ "— $\frac{9}{16}$ "— $\frac{5}{8}$ "— $\frac{11}{16}$ "— $\frac{3}{4}$ " Sockets (with  $\frac{3}{8}$ " square connections) 15" Speed Handle, Flex Handle with T Bar, Sliding Tee Handle, Flex Ratchet, 3", 6", 10" Extensions and Universal Joint. A set comprising a utility combination for good mechanics who work fast and efficiently. All parts plated.

SF-280—oTc Junior Superflex Set in Metal Case .....	\$15.35
H-290—oTc Junior Socket Box (only) .....	1.25

### No. 282 Junior Set



Consists of 13 units as follows:

Seven twelve point Junior sockets,  $\frac{3}{8}$ ",  $\frac{1}{16}$ ",  $\frac{1}{2}$ ",  $\frac{9}{16}$ ",  $\frac{5}{8}$ ",  $\frac{11}{16}$ ",  $\frac{3}{4}$ ", ( $\frac{3}{8}$ " Square connection) 15" Speed Handle, Sliding T Bar, 6" Extension, 10" Extension, Universal Joint. Steel Box. All tools beautifully plated.

No. 282—Set Complete in Metal Case .....	\$9.60
H-290—Metal Case (only) .....	1.25





## oTc Standard Sockets

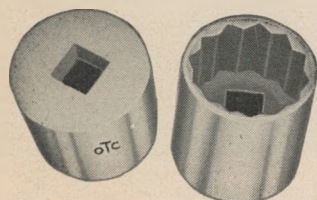
oTc Sockets are recognized by mechanics everywhere as being the highest quality sockets ever made. This statement is based on facts.

They are Hot Forged from finest Chrome Vanadium steel and due to this Hot Forging are exceptionally strong and more accurate as to size.

They are individually Heat Treated in electrically controlled furnaces which insures uniformity in strength and toughness.

### oTc Standard Units

#### $\frac{1}{2}$ " Square Drive



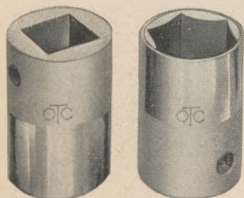
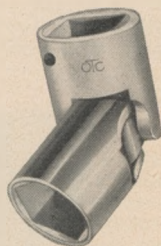
No.	Opening	Price	No.	Opening	Price
112	$\frac{3}{8}$ "	\$0.45	126	$\frac{13}{16}$ "	\$0.65
114	$\frac{7}{16}$ "	.50	128	$\frac{7}{8}$ "	.65
116	$\frac{1}{2}$ "	.50	130	$\frac{15}{16}$ "	.75
118	$\frac{9}{16}$ "	.50	131	$\frac{31}{32}$ "	.75
119	$\frac{13}{16}$ "	.50	132	1"	.80
120	$\frac{5}{8}$ "	.50	134	1 $\frac{1}{16}$ "	.90
121	$\frac{31}{32}$ "	.55	136	1 $\frac{1}{8}$ "	.95
122	$\frac{11}{8}$ "	.55	138	1 $\frac{3}{16}$ "	.95
124	$\frac{3}{4}$ "	.60	140	1 $\frac{1}{4}$ "	.95
125	$\frac{25}{32}$ "	.60			

## Standard Hexagon Universal Sockets

### $\frac{1}{2}$ " Square Drive

Popular demand has again been responsible for the addition to our line of  $\frac{1}{2}$ " drive Hexagon Universal Sockets. These sockets are built particularly for cylinder head work, motor base bolts, timing gear covers, starter, etc., where clearance is needed. They are close coupled, thin and strong for long life and practical every day utility.

No.	Opening	Price
U-118	$\frac{9}{16}$ "	\$1.60
U-120	$\frac{5}{8}$ "	1.60
U-122	$\frac{11}{16}$ "	1.70



## Standard Hexagon Sockets

### $\frac{1}{2}$ " Square Drive

Consistent demands for Hexagon sockets convinces us of the serious need for this type of wrench. Many service men prefer the single hexagon socket on certain jobs where 12 points are not necessary and where grease and grit combine to wear the broach of a 12 point wrench.

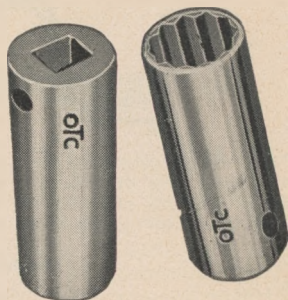
No.	Opening	Price	No.	Opening	Price
D-114	$\frac{7}{16}$ "	\$ .50	D-120	$\frac{5}{8}$ "	\$ .50
D-116	$\frac{1}{2}$ "	.50	D-122	$\frac{11}{16}$ "	.55
D-118	$\frac{9}{16}$ "	.50	D-124	$\frac{3}{4}$ "	.60

## oTc Spark Plug Sockets

3 1/2" Long—1/2" Square Drive

Hot forged and accurate, with very thin walls to get in close places on the latest motors. Beautiful plated finish.

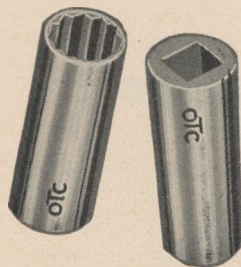
No.	Opening	Price	No.	Opening	Price
P-126	1 1/8"	\$1.00	P-132	1"	\$1.20
P-128	7/8"	1.05	P-136	1 1/8"	1.35
P-130	1 1/4"	1.15			



## oTc Extra Length Sockets

3" Long—1/2" Square Drive

These Sockets are especially designed for shackle, spring clip and body bolts, but are also indispensable for a great many other jobs. They are hot forged with very thin walls and are exceptionally strong. Attractive plated finish.



No.	Opening	Price	No.	Opening	Price	No.	Opening	Price
L-116	1/4"	\$0.85	L-124	3/4"	\$0.90	L-130	1 1/8"	\$1.05
L-118	3/16"	.85	L-125	3/8"	.95	L-131	1 1/4"	1.10
L-120	5/8"	.90	L-126	1 1/8"	1.00	L-132	1"	1.10
L-122	1 1/4"	.90	L-128	7/8"	1.00	L-134	1 1/16"	1.20

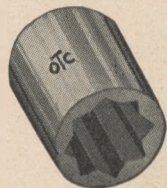
## oTc Eight Point Sockets

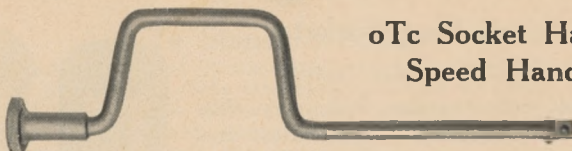
1/2" Square Drive

These Sockets are hot forged and very strong, and are very useful for Ford main bearings and brake adjustments, body bolts on a great many cars, etc.

Where square nuts and bolts are used these sockets will prove to be invaluable. Implement mechanics will find many uses for them on farm machinery. Industrial maintenance men will find them valuable additions to their tool sets also.

No.	Opening	Price	No.	Opening	Price
S-114	7/16"	\$0.50	S-122	1 1/8"	\$0.60
S-116	1/2"	.50	S-124	3/4"	.60
S-118	5/8"	.50	S-128	7/8"	.70
S-120	5/8"	.55	S-132	1"	.80
			S-134	1 1/16"	.85





### oTc Socket Handles Speed Handles

oTc Speed Handles are heat treated throughout and guaranteed against bending. The knob works on a steel ball which provides freedom of action and eliminates sticking. For long service and hard wear these handles leave nothing to be desired.

No.	Connection	Length	Price
H-183	$\frac{1}{2}$ "	15"	\$1.50
H-184	$\frac{1}{2}$ "	18"	1.75

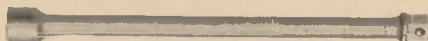
### Sliding Tee Handles



Sliding Tee Handles are very practical for utility work. They take the place of an ordinary L handle and can be used efficiently with the various length extensions. Heat treated overall.

No.	Connection	Length	Price
H-187	$\frac{1}{2}$ "	10"	\$1.25
H-181	$\frac{1}{2}$ "	15"	1.45

### Extensions



All extensions are heat-treated, full length and are stiff enough to prevent bending or twisting. They are exceptionally useful to obtain the necessary clearance when working in close places.

No.	Connection	Length	Price	No.	Connection	Length	Price
H-170	$\frac{1}{2}$ "	1 $\frac{1}{2}$ "	\$ .60	H-173	$\frac{1}{2}$ "	10"	\$1.00
H-171	$\frac{1}{2}$ "	3 "	.70	H-174	$\frac{1}{2}$ "	18"	1.25
H-172	$\frac{1}{2}$ "	6 "	.85				

### Universal Joint $\frac{1}{2}$ " Square Drive

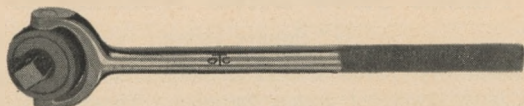


A necessary part of every socket set, the Universal Joint makes any set more practical and efficient. Used with extensions or speed handles they give that extra clearance needed so many times to reach inaccessible jobs. This tool is only 2  $\frac{3}{8}$ " long overall and will break over at nearly right angles.

No. H-189—Universal Joint .....\$1.50



### oTc Flex Ratchet



A radical departure in socket wrench handles. Combines all of the good features of the Flex Handle—with those of the 24 tooth oTc Ratchet.

Made in both Standard ( $\frac{1}{2}$ " Square Drive) and Junior ( $\frac{3}{8}$ " Square Drive) sizes and a necessity with either set to the mechanic who wishes to save time. Has push through plug. 11" long.

H-160—oTc Standard Flex Ratchet with $\frac{1}{2}$ " Square Plug .....	\$4.25
H-162—Standard $\frac{1}{2}$ " Ratchet Plug (only) .....	.50

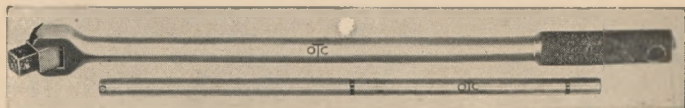
### oTc 24-Tooth Ratchet



A very smooth working ratchet with 24 husky teeth, four dogs always engaged, enclosed to keep out dirt and grease. Equipped with "push through" type plug. Will not wedge or stick. This ratchet is built for heavy service. 10 $\frac{1}{2}$ " long.

H-161—oTc Standard Ratchet, with $\frac{1}{2}$ " Square Plug .....	\$3.75
H-162—Standard $\frac{1}{2}$ " Ratchet Plug (only) .....	.50

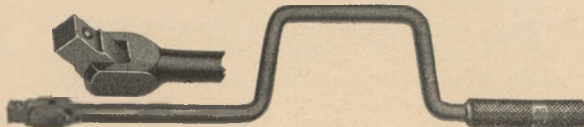
### oTc Flex Handles



Positively the strongest and most perfectly balanced Flex Handles made. Just the thing for Head Bolts, Main and Connecting Rod Bearings. Attractive plated finish.  $\frac{1}{2}$ " service drive.

H-154—oTc 10 $\frac{1}{2}$ " Flex Handle with T Bar .....	\$1.65
H-175—oTc 12" Flex Handle with T Bar .....	2.00
H-176—oTc 15" Flex Handle with T Bar .....	2.25
H-177—oTc 18" Flex Handle with T Bar .....	2.75

### oTc Standard Flex Speeder



A short throw brace, with the valuable flex feature. Leverage, to break loose or tighten the toughest nut—speed to spin them on, or off. A wonderfully handy and convenient tool.  $\frac{1}{2}$ " Square Drive, length 16" over all. Attractively plated.

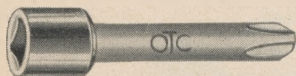
H-185—oTc Flex Speeder .....	\$2.50
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## Phillips Screw Driver Attachments

### $\frac{1}{2}$ " Square Drive

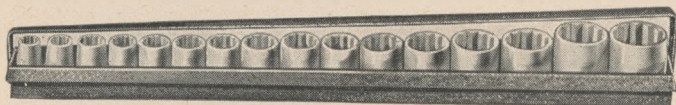
Three sizes of Phillips Screw Driver Attachments are available in the  $\frac{1}{2}$ " Drive for use with standard socket handles. These attachments will be found useful on door hinges and many other places where this new type screw is used.

Built of alloy steel and thoroughly heat-treated for long life and hard use.



No.	Point Size	Overall Length	Drive	Price
H-165	2	3"	$\frac{1}{2}$ "	\$1.00
H-166	3	3"	$\frac{1}{2}$ "	1.00
H-167	4	3"	$\frac{1}{2}$ "	1.00

## No. 188 Socket Set



This set carries a complete range of sixteen sizes as follows:  $\frac{7}{16}$ ",  $\frac{1}{2}$ ",  $\frac{9}{16}$ ",  $\frac{5}{8}$ ",  $\frac{3}{4}$ ",  $\frac{13}{16}$ ",  $\frac{7}{8}$ ",  $\frac{15}{16}$ ",  $\frac{1}{2}$ ",  $1\frac{1}{16}$ ",  $1\frac{1}{8}$ ",  $1\frac{1}{4}$ ". Contained in the Metal Tray as illustrated the set provides all the most popular sizes in a handy, convenient carrying case.

No. 188—Socket Set in Metal Tray .....\$11.45

No. 195—Metal Tray (only)  $18\frac{1}{2}$ " long ..... 1.00

## No. 187 Socket Set

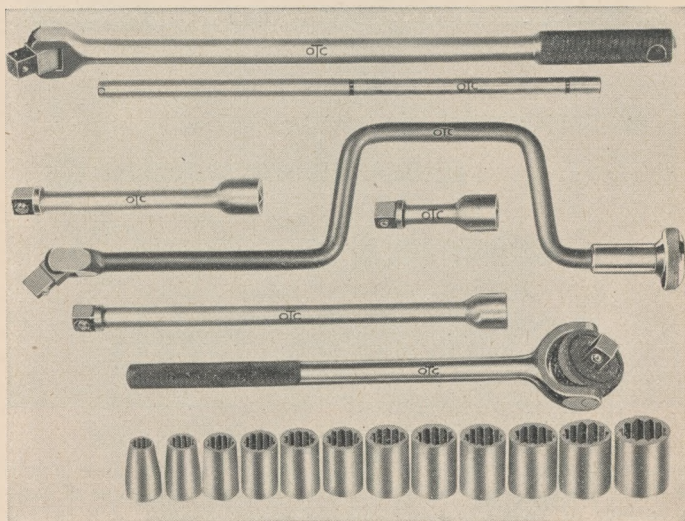
(Not Illustrated)

A shorter range of sockets including the following sizes:  $\frac{7}{16}$ ",  $\frac{1}{2}$ ",  $\frac{9}{16}$ ",  $\frac{5}{8}$ ",  $\frac{11}{16}$ ",  $\frac{3}{4}$ ",  $\frac{13}{16}$ ",  $\frac{7}{8}$ ",  $\frac{15}{16}$ ",  $1$ ". Popular sizes up to one inch only in a 12" Metal Tray which handles this set with ease. Tray exactly as pictured above but 12" long.

No. 187—Socket Set in Metal Tray .....\$7.40

No. 196—Metal Tray (only) 12" long ..... .80

## oTc No. SF-180 Superflex Set



A combination of sockets and handles designed to increase the speed, efficiency and thoroughness of every mechanic who owns this set. To those men who aspire to reach a maximum of efficiency and who take pride and interest in good workmanship this set would prove to be a factor in their success.

Consisting as it does of all the most popular handles and socket sizes most needed in every day work, this set combines a maximum of utility and flexibility at a very low price.

The oTc Superflex Socket Set consists of the following pieces: Fifteen, 12 point Sockets— $\frac{1}{16}$ "— $\frac{1}{8}$ "— $\frac{9}{16}$ "— $\frac{5}{8}$ "— $\frac{31}{32}$ "— $\frac{11}{16}$ "— $\frac{3}{4}$ "— $\frac{13}{16}$ "— $\frac{13}{16}$ "— $\frac{7}{8}$ "— $\frac{15}{16}$ "—1"— $1\frac{1}{16}$ "— $1\frac{1}{8}$ " and  $1\frac{1}{4}$ ". 15" Flex Handle (with T Bar), Flex Brace, and 24 tooth Flex Ratchet—3"—6" and 10".

SF-180—oTc Superflex Set (as pictured above) in Metal Case .....\$23.50  
H-190—oTc Superflex Set Metal Case,  $18\frac{1}{2}$ " x  $6\frac{1}{2}$ " x 2" ..... 2.00

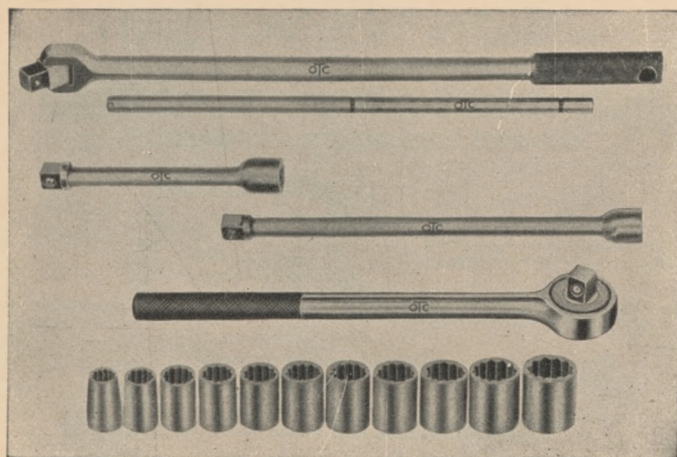
### oTc Tie Rod Sockets

For adjusting tie rod, drag link and shock absorber screws.



Item No.	Width of Bit	Service Connection	Price
227	$\frac{3}{4}$ "	$\frac{3}{8}$ " sq.	\$0.50
127	$\frac{13}{16}$ "	$\frac{1}{2}$ " sq.	.75
129	$\frac{15}{16}$ "	$\frac{1}{2}$ " sq.	.75





### oTc No. SF-181 Standard Flex Set

A medium priced combination of sockets and handles that is within the reach of every pocketbook. This set can be used on all makes of cars and on a great variety of jobs. Contains the following pieces:  $\frac{1}{8}$ ",  $\frac{1}{2}$ ",  $\frac{3}{8}$ ",  $\frac{5}{8}$ ",  $1\frac{1}{8}$ ",  $\frac{3}{4}$ ",  $1\frac{1}{2}$ ",  $1\frac{3}{8}$ ",  $1\frac{1}{4}$ ",  $1\frac{1}{2}$ ", and 1" sockets, 15" Flex Handle, 6" and 10" Extensions and the oTc 24 tooth Ratchet in a strong metal carrying case.

SF-181—oTc Standard Set in Metal Case ..... \$15.95  
 F-190—Metal Box (only)  $5\frac{1}{2}$ " x  $16$ " x  $2$ " ..... 1.50

### \*Deluxe Mechanics Chest

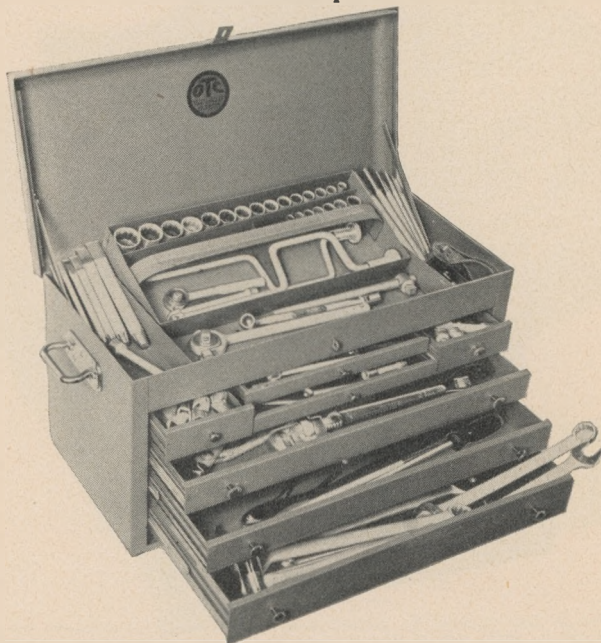
Utilizing every bit of space this new, roomy chest is the last word in tool box design. Finished in blue crackle.

Two small side drawers are  $11$ " x  $4\frac{3}{4}$ " x  $2$ ". Shallow center drawers for micrometers and other instruments are  $11$ " x  $12$ " x  $1$ ". The bottoms of these drawers are sprayed with felt. The three bottom drawers are  $11$ " x  $23$ " x  $2$ " and  $11$ " x  $23$ " x  $3$ " respectively. All drawers operate on compound slides for smooth operation even when loaded.

Adjustable dividers can be furnished if desired for the three bottom drawers.

No. 107—DeLuxe chest, less Tote Tray  $26$ " x  $14\frac{1}{2}$ " x  $12$ ", wt. 65 lbs. \$21.85  
 No. 107—A Tote Tray (only)  $17\frac{1}{2}$ " x  $8$ " x  $2\frac{1}{4}$ " ..... 1.50  
 Adjustable Dividers  $11$ " x  $23$ " x  $2$ " each ..... 1.25

## No. 103 Super Set



Comprising a wide range of wrench sizes and including a well rounded out assortment of generally useful tools this new oTc set has already found ready acceptance among maintenance men.

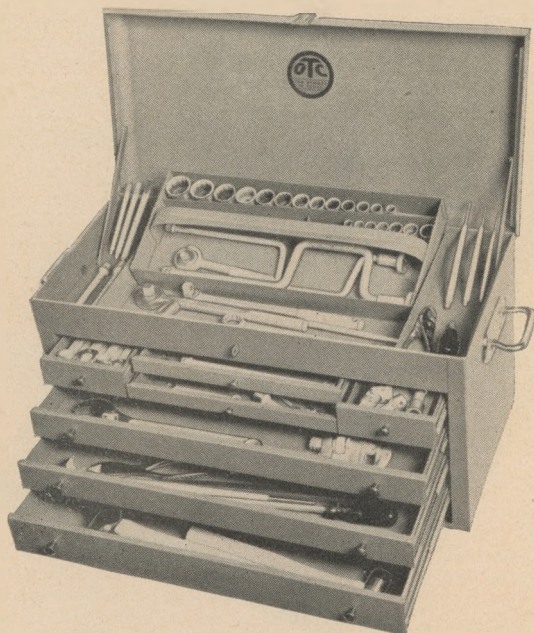
For the maintenance man who enjoys working with good tools and insists on the best, this set will meet all his requirements.

It includes 86 units with the chest. There are 16 sockets,  $\frac{3}{8}$ ",  $\frac{7}{8}$ ",  $\frac{1}{2}$ ",  $\frac{1}{4}$ ",  $\frac{3}{16}$ ",  $\frac{1}{8}$ ",  $\frac{3}{32}$ ",  $\frac{1}{16}$ ",  $\frac{3}{64}$ ",  $\frac{1}{32}$ ",  $\frac{1}{64}$ ",  $\frac{1}{80}$ ",  $\frac{1}{100}$ ",  $\frac{1}{120}$ ",  $\frac{1}{140}$ ",  $\frac{1}{160}$ ",  $\frac{1}{180}$ ",  $\frac{1}{200}$ ",  $\frac{1}{220}$ ",  $\frac{1}{240}$ ",  $\frac{1}{260}$ ",  $\frac{1}{280}$ ",  $\frac{1}{300}$ ",  $\frac{1}{320}$ ",  $\frac{1}{340}$ ",  $\frac{1}{360}$ ",  $\frac{1}{380}$ ",  $\frac{1}{400}$ ",  $\frac{1}{420}$ ",  $\frac{1}{440}$ ",  $\frac{1}{460}$ ",  $\frac{1}{480}$ ",  $\frac{1}{500}$ ",  $\frac{1}{520}$ ",  $\frac{1}{540}$ ",  $\frac{1}{560}$ ",  $\frac{1}{580}$ ",  $\frac{1}{600}$ ",  $\frac{1}{620}$ ",  $\frac{1}{640}$ ",  $\frac{1}{660}$ ",  $\frac{1}{680}$ ",  $\frac{1}{700}$ ",  $\frac{1}{720}$ ",  $\frac{1}{740}$ ",  $\frac{1}{760}$ ",  $\frac{1}{780}$ ",  $\frac{1}{800}$ ",  $\frac{1}{820}$ ",  $\frac{1}{840}$ ",  $\frac{1}{860}$ ",  $\frac{1}{880}$ ",  $\frac{1}{900}$ ",  $\frac{1}{920}$ ",  $\frac{1}{940}$ ",  $\frac{1}{960}$ ",  $\frac{1}{980}$ ",  $\frac{1}{1000}$ ". Three Universal Hexagon opening sockets,  $\frac{1}{8}$ ",  $\frac{3}{16}$ ",  $\frac{1}{4}$ ",  $\frac{5}{16}$ ",  $\frac{3}{8}$ ",  $\frac{7}{16}$ ",  $\frac{1}{2}$ ",  $\frac{9}{16}$ ",  $\frac{5}{8}$ ",  $\frac{11}{16}$ ",  $\frac{3}{4}$ ",  $\frac{7}{8}$ ",  $\frac{15}{16}$ ",  $\frac{1}{1}$ ". Flex Ratchet, 15" Flex Handle, 15" Speed Handle, 10" Sliding Tee, Universal Joint, 3" Extension, 6" Extension and 10" Extension all with standard  $\frac{1}{2}$ " Drive. Seven Junior Sockets,  $\frac{3}{8}$ ",  $\frac{7}{8}$ ",  $\frac{1}{2}$ ",  $\frac{9}{16}$ ",  $\frac{5}{8}$ ",  $\frac{11}{16}$ ",  $\frac{3}{4}$ ". Junior Ratchet, 15" Speed Handle, 10" Tee Handle, Universal Joint, 3" Extension, 6" Extension and 10" Extension all with  $\frac{3}{8}$ " square drive. One set of 15 Combination Open End and Box Wrenches,  $\frac{3}{8}$ ",  $\frac{7}{8}$ ",  $\frac{1}{2}$ ",  $\frac{9}{16}$ ",  $\frac{5}{8}$ ",  $\frac{11}{16}$ ",  $\frac{3}{4}$ ",  $\frac{7}{8}$ ",  $\frac{15}{16}$ ",  $\frac{1}{1}$ ",  $\frac{1 1}{8}$ ",  $\frac{1 1}{4}$ ",  $\frac{1 1}{2}$ ",  $\frac{1 3}{4}$ ",  $\frac{1 5}{8}$ ". Three Screw Drivers, Nos. 719, 739, 741, Five Pliers, 782, 712, C-410, 705 and 614. One 10" Adjustable Wrench, a 10" Pipe Wrench, three Files, 12" Flat, 10" Round and 12" square, one F-1618  $\frac{1}{2}$ " x  $\frac{3}{8}$ " Flex Wrench, one 2 pound Ball Pein Hammer, a 12 oz. Pyralin Tip Hammer, one No. PC-25 Set of 6 Chisels and 6 Taper Punches and one PB-43 Pry Bar in the No. 107 DeLuxe Chest.

No. 103—Super Service Set (tools only) .....\$89.95

\*No. 107—DeLuxe Chest with Tote Tray ..... 23.35

## No. 104 Super Set



Covering a popular range of wrench sizes this set is designed to permit additions in the larger sizes when necessary. It is complete and includes the many essential tools which maintenance men use every day. Larger sizes in both sockets and other wrenches may be added as needed.

No other set in this price range will be found to be as complete. It contains 62 units including the chest as follows, 13 twelve point Sockets Nos. 114, 116, 118, 120, 122, 124, 126, 128, 130, 132, 134, 136 and 140. One 10" 24 tooth ratchet No. H-161, one No. H-175 Flex Handle, 1 No. H-183 Speed Handle, one H-189 Universal Joint and two extensions H-172 and H-173 all with  $\frac{1}{2}$ " square drive. Seven 12 point Junior Sockets, 212, 214, 216, 218, 220, 222, 224, one Junior Flex Ratchet No. H-260, one H-283 Speed Handle, one H-289 Universal Joint, two extensions, H-271 and H-272 all with  $\frac{3}{8}$ " square drive. One set of 8 Combination Box and Open End Wrenches Nos. C-12, C-14, C-16, C-18, C-20, C-22, C-24 and C-28. Three Screw Drivers 719, 739 and 741, Four Pliers, Nos. 782, 705, 712 and 708, Three Files 12" Flat, 10" Round and 12" Square, One DA-12 Adjustable Wrench, one PW-10 Pipe Wrench, one F-1214  $\frac{3}{8}$ " x  $\frac{1}{8}$ " Flex Wrench, one BP-16 Ball Pein Hammer, One PT-16 Pyralin Tip Hammer, One Set of 3 Chisels, CC-8, CC-12, CC-20, One Set of 3 Taper Punches TP-8, TP-12, TP-20 and one PB-43 Pry Bar.

No. 104—Super Service Set (tools only) .....\$60.15  
 \*No. 107—DeLuxe Chest with Tote Tray ..... 23.25



## No. 199 Box and Sets



### MECHANICS Set No. 185

(Illustrated Above)

The above set contains a very complete combination of Sockets and Handles considered most practical for general repair work. A set that will be the pride of the most seasoned and experienced mechanic or the beginner alike. Only essential tools are included. The case is a compact, sturdy, well built box of heavy gauge metal with a cantilever tray that opens when the lid is raised. Small and light enough for easy efficient handling yet strong and large enough to hold other tools than those shown.

The No. 185 Super Set contains 40 separate items as follows: 17 Standard Sockets, 7-16", 1-2", 9-16", 19-32", 5-8", 21-32", 11-16", 3-4", 25-32", 13-16", 7-8", 15-16", 1", 1 1-16", 1 1-8", 1 3-16", 1 1-4", 7 Junior Sockets 3-8", to 3-4" by sixteenths, 15" Speed Handle, 15" Flex Handle, Tee Bar, 10" Sliding Tee Handle, Universal Joint, Ratchet with Plug, 10", 6" and 3" extensions all with 1-2" service connections, 15" Junior Speed Handle, Ratchet with plug, Sliding Tee Handle, Universal Joint, 10", 6" and 3" extensions all with 3-8" square service connections.

No. 185—Super Set Complete in Chest (as illustrated) .....\$40.55

### MECHANICS Set No. 184

(Not Illustrated)

An ideal set for the man who wishes to build up a complete set gradually. Less expensive than the set above but designed with the idea of obtaining a maximum of efficiency with the smallest number of tools. The No. 184 Super Set contains the following tools: 17 Standard Sockets 7-16" to 1 1-4" as above, 7 Junior Sockets 3-8" to 3-4" as above, 15" Standard Flex Handle, Tee Bar, Standard Universal Joint, Standard 6" Extension, Junior Speed Handle, Junior Ratchet, Junior Universal Joint and Junior 6" Extension. Thirty-two separate items in the metal case.

No. 184—Super Set Complete in Chest .....\$29.75

No. 199—Mechanics Tool Chest (as illustrated less tools) ..... 4.60

A complete set of essential tools which covers a range of uses from adjusting ignition and carburetor parts to work on Trucks and Tractors.

The No. 100 Master Set includes the **MASTERCHEST** as illustrated and contains the following tools: 7 Junior Sockets  $\frac{3}{8}$ ",  $\frac{7}{16}$ ",  $\frac{1}{2}$ ",  $\frac{9}{16}$ ",  $\frac{5}{8}$ ",  $1\frac{1}{8}$ ", and  $\frac{3}{4}$ " with  $\frac{3}{8}$ " square service; 16 Standard Sockets  $\frac{3}{8}$ ",  $\frac{7}{16}$ ",  $\frac{1}{2}$ ",  $\frac{9}{16}$ ",  $\frac{5}{8}$ ",  $1\frac{1}{8}$ ",  $\frac{3}{4}$ ",  $1\frac{1}{4}$ ",  $\frac{1}{2}$ ",  $\frac{3}{4}$ ",  $1\frac{1}{2}$ ",  $1\frac{3}{4}$ ",  $1\frac{1}{2}$ ",  $1\frac{3}{4}$ ",  $1\frac{1}{2}$ ",  $1\frac{3}{4}$ ", twelve point and  $\frac{7}{16}$ ",  $\frac{1}{2}$ ",  $\frac{9}{16}$ ",  $\frac{5}{8}$ ",  $1\frac{1}{8}$ " and  $\frac{3}{4}$ " eight point sockets with  $\frac{1}{2}$ " square service; 9 Heavy Duty Sockets,  $1\frac{1}{8}$ ",  $1\frac{1}{4}$ ",  $1\frac{1}{2}$ ",  $1\frac{3}{4}$ ",  $1\frac{1}{2}$ ",  $1\frac{3}{4}$ ",  $1\frac{1}{2}$ ",  $1\frac{3}{4}$ " and  $1\frac{5}{8}$ " with  $\frac{3}{4}$ " square service. Six Junior Handles, H-289, H-261, H-283, H-271, H-272, and H-273. Five Standard Handles, H-176, H-161, H-189, H-172 and H-173. Three Heavy Duty Handles, H-377, H-361 and H-373. Five Screw Drivers, Nos. 731, 721, 736, 740 and 739. Four pliers, Nos. C-410, 782, 705 and 712.

Five Box Wrenches Nos. 1214, 1618, 2022, 2425 and 2628. One set of 8 Tappet wrenches, one set of 7 Open End Wrenches, one set of 6 Cold Chisels, one set of 6 Taper Punches, one BP-16 Ball Pein Hammer, 1 PB-43 Pry Bar, 1-860 Thickness Gauge, 1-866 Ignition Gauge and 1-PT-16 Pyralin Tip Hammer.

No. 100—Master Tool Set, complete in chest .....\$121.10

\*No. 101—Masterchest, (only) 13" x 10" x 26", Net Weight 43 lbs. .... 18.25

## No. 102 Master Set (Not Illustrated)

While this set does not include as great an assortment of tools as the set illustrated above, it is, nevertheless a very complete set and includes a full range of sizes. It also is housed in the beautiful No. 101 Masterchest and for efficiency of operation is second only to the above set.

Set No. 102 includes 7 Junior Sockets from  $\frac{3}{8}$ " to  $\frac{3}{4}$ " as above; 16 Standard Sockets from  $\frac{3}{8}$ " to  $1\frac{1}{4}$ " as above; 6 Standard 8 Point Sockets from  $\frac{7}{16}$ " to  $\frac{3}{4}$ " as above; 6 Junior Handles, H-289, H-261, H-283, H-271, H-272 and H-273; 5 Standard Handles, H-176, H-161, H-189, H-172 and H-173. Three pliers, 782, 705 and 712. Four Screw Drivers, 731, 736, 739 and 740. Five Box Wrenches, Set No. B-5; One set of 7 Open End Wrenches; One set of 6 Cold Chisels  $\frac{1}{4}$ " to  $\frac{3}{4}$ "; One Set 6 Taper Punches  $\frac{1}{4}$ " to  $\frac{3}{4}$ ". One BP-16 Ball Pein Hammer, One PB-43 Pry Bar and one No. 860 Thickness Gauge.

No. 102—Master Set Complete in No. 101 Chest .....\$80.95

No. 102—Master Set (tools only) ..... 62.70



## \*oTc Deluxe Toolmaster



Built in the modern manner with pleasing lines and finished in blue crackle lacquer with sparkling chromium trim, the all-enclosed Deluxe TOOLMASTER stands out as the ultimate in cabinet design.

Engineered and designed by mechanics particularly for mechanics who appreciate fine things. All available space is utilized giving plenty of room for a complete set of tools with room to spare. The man who owns a TOOLMASTER is immediately recognized as an efficient workman who takes pride in his equipment as well as in the work he does.

The MASTERTOTER is 36" high, 18" deep and 27" wide.

The MASTERCHEST is 13" high, 10" deep and 26" wide.

All drawers are roomy and slide on compound slides which roll freely even when the drawers are loaded. Built-in locks make the TOOLMASTER a safe depository for valuable equipment. The chest is provided with a strong hasp to permit the use of a padlock. Rubber-tired, ball bearing casters carry this unit over rough cement floors easily and silently while the

rigid chrome handle facilitates pushing or pulling the entire unit to any position.

No feature of design or workmanship has been forgotten to provide an attractive, efficient, sturdy rollaway toolsafe for the discriminating service man.

Net Weight complete 150 pounds.

No. 106—oTc Deluxe Toolmaster .....\$62.00





### \*oTc Mastertoter



The new oTc MASTERTOTER combines beauty and practical design to provide a fitting cabinet for the equipment of the expert service man.

Two roomy drawers each  $22\frac{1}{2}$ " x  $17\frac{1}{2}$ " x  $3\frac{1}{2}$ " and mounted on compound slides furnish sufficient space for small tools, while the shelves will accommodate any bulky equipment such as electric drills, etc. The MASTERTOTER is fully enclosed and can be securely locked to prevent theft. Rubber-tired ball bearing casters allow freedom and silence of movement.

Sturdily built of heavy gauge material and spot welded throughout for strength and durability, the MASTERTOTER will give service and complete satisfaction. 36" high, 18" deep and 27" wide.

oTc No. 105—Mastertoter, Net Weight 104 pounds ..... \$43.75

### \*oTc Masterchest

#### No. 101

The oTc MASTERCHEST is built to provide an abundance of room for a complete set of hand tools. It is roomy with well-spaced compartments to permit segregation of the different types of wrenches.

Four drawers  $16\frac{1}{2}$ " x  $9\frac{1}{2}$ " x 2",  $9\frac{1}{2}$ " x  $7\frac{1}{4}$ " x 2",  $9\frac{1}{2}$ " x  $7\frac{1}{4}$ " x 3" and  $9\frac{1}{2}$ " x  $7\frac{1}{4}$ " x 3" provide plenty of space for small tools while a larger compartment allows room for Heavy Duty Sockets and larger tools. The removable tray 25" x 8" x 2" has two socket divisions where a complete set of standard sockets and junior sockets can be kept. Drawers run on compound slides.

Built of heavy gauge metal and welded throughout. The blue, crackle finish and the streamline design makes this chest an attractive addition to any service man's outfit. Weight 43 pounds.



No. 101—Masterchest with Tote-Tray ..... \$18.25

No. 101-A—Tote Tray (only) 25" x 8" x 2" ..... 3.00

Adjustable Dividers for Drawers (each) ..... 1.10



## \*Standard Toolmaster

With No. 101 Masterchest

This combination includes the No. 109 Standard Tooltoter and the beautiful No. 101 Masterchest.

Providing ample space for larger tools and room to spare for small tools this unit will appeal to many service men as an economical one. Medium priced yet sufficiently large and roomy it will fulfill all requirements under most exacting shop conditions. All drawers operate on compound slides.

Every shop should be equipped with one or more oTc Tooltoters. A variety of selections is available to suit every service man's needs.

Equipped with 3" hard rubber casters.

Weight 103 pounds.

No. 117—Standard Toolmaster with

101 Chest ..... \$41.25



## \*oTc Standard Tooltoter



A compact, roomy Toter of medium size for the mechanic or machinist who requires a convenient and safe place in which to store his equipment. The new oTc Standard Toter is sturdily built. Its top deck is large enough to accommodate a tool chest or provide a portable bench or table on which tools can be laid while in use. Its two doors when open, swing back out of the way and reveal one roomy drawer 24½" long, 11" wide and 4¾" deep and mounted on compound slides. The lower compartment has a convenient shelf for reamer sets and other tools while plenty of space is reserved for large equipment and electric drills, etc.

This cabinet is completely enclosed and can be securely locked with a padlock. It is 26½" wide, 15" deep and 31" high. It is attractively finished in blue crackle and will add to the appearance of any shop. Equipped with 3" hard rubber casters. Weight 60 pounds.

No. 109—Standard Tooltoter ..... \$23.00

## \*oTc Standard Toolmaster

With No. 110 Chest



This combination of the No. 109 Standard Toter and the No. 110 Standard Chest makes an ideal and economical unit for the discriminating service man. It provides a safe and convenient storage place for a complete set of hand tools. In addition, it is an attractive piece of equipment and will enhance the appearance of any shop.

It is convenient and efficient and can be securely locked. Heavy steel casters permit rolling it to any position in the shop making all necessary hand tools easily available at the job. The unit stands approximately 36" high.

Built of heavy gauge metal and of welded construction throughout. All drawers operate on compound slides. Beautiful blue, crackle finish.

Equipped with 3" hard rubber casters. Weight—80 pounds.

### oTc STANDARD TOOLMASTER

· with 110 Chest ..... \$34.45

## \*Standard Mechanics Chest

No. 110

Built of heavy gauge metal and of welded construction throughout, the new oTc Standard Chest will meet every requirement for a medium priced tool chest. It is compactly built to provide a maximum of storage space and will accommodate a great many small hand tools.

A socket compartment runs all the way across the top tray to hold a complete set of standard sockets. There is an additional small compartment for junior sockets as well. The top tray is 2¼" deep.

Three drawers all 21" long, and 1½", 2" and 3" deep respectively which operate on compound slides provide room for socket handles, end wrenches, box wrenches, screw drivers, etc.

The box itself is 22" long, 8¾" wide, 9½" deep and weighs 30 pounds.

No. 110—Standard Chest ..... \$11.45

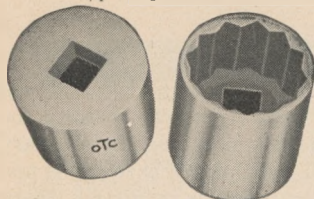






## oTc Heavy Duty Sockets

$\frac{3}{4}$ " Square Drive



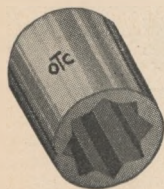
Up to the present time it was generally believed that in order to do heavy duty work on Tractors, Trucks, Power Shovels, etc., and to stand the abuse that apparently was necessary on this kind of equipment Sockets had to be thick and heavy and the handles had to be big and clumsy.

oTc has set a standard for Heavy Duty equipment that has not yet been equaled. These sockets are accurate in size, extremely thin and exceptionally strong.

No.	Opening	Length	Price	No.	Opening	Length	Price
328	$\frac{7}{8}$ "	$1\frac{3}{4}$ "	\$0.90	348	$1\frac{1}{2}$ "	$2\frac{3}{8}$ "	\$1.50
330	$1\frac{1}{8}$ "	$1\frac{3}{4}$ "	.90	352	$1\frac{5}{8}$ "	$2\frac{3}{8}$ "	1.65
332	1"	$1\frac{11}{16}$ "	.90	354	$1\frac{11}{16}$ "	$2\frac{3}{4}$ "	1.80
334	$1\frac{1}{16}$ "	$1\frac{11}{16}$ "	.90	356	$1\frac{3}{4}$ "	$2\frac{3}{4}$ "	1.90
336	$1\frac{1}{8}$ "	2"	1.00	358	$1\frac{11}{16}$ "	3"	2.10
338	$1\frac{3}{16}$ "	2"	1.05	360	$1\frac{7}{8}$ "	3"	2.35
340	$1\frac{1}{4}$ "	$2\frac{1}{16}$ "	1.10	364	2"	3"	2.45
342	$1\frac{1}{8}$ "	$2\frac{1}{16}$ "	1.20	368	$2\frac{1}{8}$ "	3"	3.20
344	$1\frac{3}{8}$ "	$2\frac{1}{4}$ "	1.25	370	$2\frac{3}{16}$ "	3"	3.65
346	$1\frac{7}{16}$ "	$2\frac{1}{4}$ "	1.40	372	$2\frac{1}{4}$ "	$3\frac{1}{4}$ "	4.00
				376	$2\frac{3}{8}$ "	$3\frac{1}{4}$ "	4.45

## Heavy Duty Eight Point Sockets

$\frac{3}{4}$ " Square Drive



Eight point, or double square sockets are furnished in the popular sizes for use on square bolts and nuts found on Tractors, Road Equipment, Farm Machinery and Industrial machine tools.

These sockets should be added to your present Heavy Duty Set to increase its range of effectiveness.

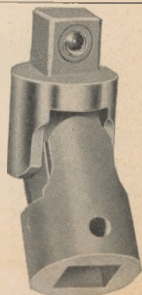
No.	Opening	Price	No.	Opening	Price
S-334	$1\frac{1}{16}$ "	\$1.25	S-346	$1\frac{7}{8}$ "	\$1.75
S-340	$1\frac{1}{4}$ "	1.55	S-352	$1\frac{5}{8}$ "	2.10

## Universal Joint

$\frac{3}{4}$ " Square Drive

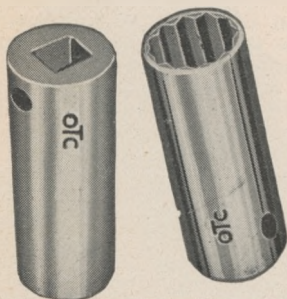
Service men will be glad to have the opportunity to obtain a Heavy Duty Universal Joint. This part is a valuable addition to any Heavy Duty set since it allows the operator to reach inaccessible bolts and nuts it would be impossible to turn otherwise. It is only  $3\frac{3}{4}$ " long overall and will break over at nearly right angles.

No. H-389—Heavy Duty Universal Joint .....\$4.50



## Heavy Duty Sockets

Extra Length  
 $\frac{3}{4}$ " Square Drive



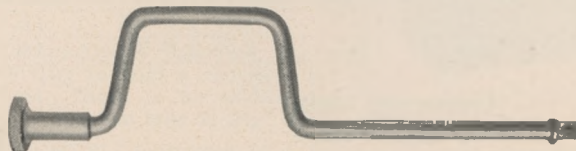
An extra length heavy duty socket designed for work where the bolt projects through the nut and it is impossible to use an ordinary socket. Where additional depth is required and a minimum of clearance is available these sockets will be exceptionally useful.

Many places on industrial machinery, pumps, motors, generators, etc., these sockets will prove to be valuable time savers.

No.	Opening	Length	Price	No.	Opening	Length	Price
L-328	$\frac{7}{8}$ "	2 $\frac{1}{2}$ "	\$1.30	L-352	1 $\frac{5}{8}$ "	3 $\frac{1}{2}$ "	\$2.50
L-330	1 $\frac{1}{8}$ "	2 $\frac{1}{2}$ "	1.30	L-354	1 $\frac{11}{16}$ "	3 $\frac{1}{2}$ "	2.65
L-332	1"	2 $\frac{1}{2}$ "	1.30	L-356	1 $\frac{3}{4}$ "	3 $\frac{1}{2}$ "	2.80
L-334	1 $\frac{1}{8}$ "	3"	1.40	L-358	1 $\frac{11}{16}$ "	4"	3.00
L-336	1 $\frac{1}{8}$ "	3"	1.40	L-360	1 $\frac{7}{8}$ "	4"	3.15
L-338	1 $\frac{3}{8}$ "	3"	1.50	L-364	2"	4"	3.30
L-340	1 $\frac{1}{4}$ "	3"	1.60	L-368	2 $\frac{1}{8}$ "	4"	3.70
L-342	1 $\frac{1}{8}$ "	3"	1.70	L-370	2 $\frac{3}{16}$ "	4 $\frac{1}{2}$ "	4.50
L-344	1 $\frac{3}{8}$ "	3 $\frac{1}{2}$ "	1.85	L-372	2 $\frac{1}{4}$ "	4 $\frac{1}{2}$ "	4.75
L-346	1 $\frac{7}{16}$ "	3 $\frac{1}{2}$ "	2.10	L-376	2 $\frac{3}{8}$ "	4 $\frac{1}{2}$ "	4.95
L-348	1 $\frac{1}{2}$ "	3 $\frac{1}{2}$ "	2.25				

## Heavy Duty Speed Handle

$\frac{3}{4}$ " Square Drive



For use with the smaller sizes of Heavy Duty Sockets the new oTc Heavy Duty Speed Handle will prove to be a real time-saver.

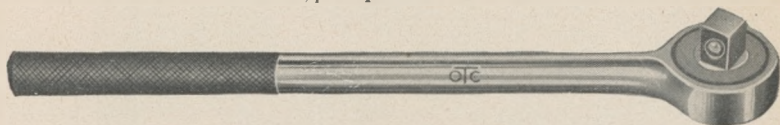
Well balanced and sturdy, yet light and easily operated, this handle has a knurled revolving grip for fast work. It is 16" overall, has a 4 $\frac{1}{2}$ " throw and is made from  $\frac{11}{16}$ " stock. A necessity in every Heavy Duty Socket Set.

No. H-384—Heavy Duty Speed Handle .....\$5.50



## Heavy Duty Handles

$\frac{3}{4}$ " Square Drive

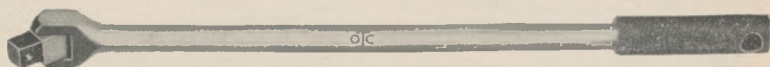


### Heavy Duty Ratchet

The oTc Heavy Duty Ratchet is a light, well balanced tool designed for fast, efficient work on heavy equipment. Having a small head and 36 teeth it can be used in close places and a short throw obtained. Four dogs always in engagement provide plenty of strength to withstand its 20 inches of leverage. Truck and Tractor men declare it to be the finest in heavy duty ratchets.

No. H-361—Heavy Duty Ratchet 20" long .....\$7.90

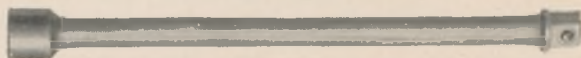
### Heavy Duty Flex Handle



A well balanced handle drop-forged for strength. One of the handiest tools in a heavy duty set. It is exceptionally useful on main bearings, con rods, head bolts, axle work, etc., on Tractors and Trucks. Built of high grade chrome vanadium steel and heat-treated all the way through.

No. H-377—Heavy Duty Flex Handle 20" long .....\$4.35

### Heavy Duty Extensions



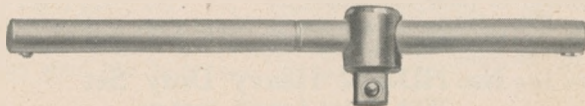
These extensions are upset-forged and guaranteed not to twist or bend. Actually the strongest of their kind and very necessary to provide clearance. Furnished in three popular and convenient lengths.

No. H-371—4 $\frac{1}{2}$ " long .....\$1.40

No. H-373—10" long .....1.65

No. H-374—18" long .....2.50

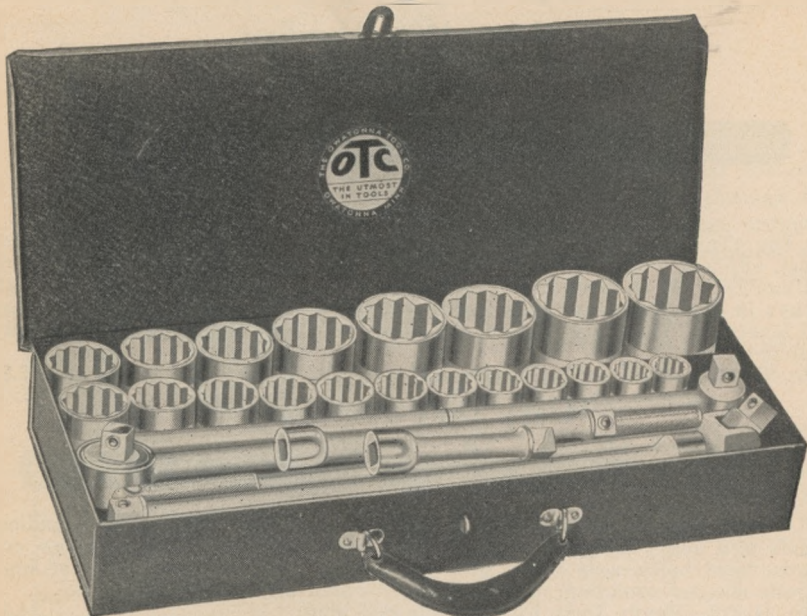
### Heavy Duty Sliding Tee



An exceptionally useful handle when used with any one of the above extensions. It provides leverage where most necessary and with an extension makes a very practical Tee Wrench for use on all Tractor and Truck Jobs.

No. H-387—20" Sliding Tee Handle .....\$2.75





## No. HD-385 Heavy Duty Socket Set

$\frac{3}{4}$ " Square Drive

This new oTc Heavy Duty Socket Set is the most complete set of its kind on the market today. It covers a range of sizes to handle every job not only in Truck and Tractor work but also on Diesel Motors in power plants, etc.

This set includes 28 units, including the box. It includes 20 Heavy Duty Sockets from  $\frac{7}{8}$ " to  $2\frac{3}{8}$ " as follows:  $\frac{7}{8}$ ",  $1\frac{1}{8}$ ", 1",  $1\frac{1}{16}$ ",  $1\frac{1}{8}$ ",  $1\frac{1}{4}$ ",  $1\frac{1}{8}$ ",  $1\frac{3}{8}$ ",  $1\frac{1}{2}$ ",  $1\frac{5}{8}$ ",  $1\frac{11}{16}$ ",  $1\frac{3}{4}$ ",  $1\frac{13}{16}$ ",  $1\frac{7}{8}$ ", 2",  $2\frac{1}{8}$ ",  $2\frac{1}{4}$ " and  $2\frac{3}{8}$ ". It includes also a 20"—36 tooth Ratchet, 20" Flex Handle, 20" Sliding Tee Handle and 3 Extensions, 18", 10", and  $4\frac{1}{2}$ " in a substantial heavy metal box. Metal case is  $3\frac{1}{2}$ " deep, 9" wide,  $21\frac{1}{2}$ " long and weighs 11 pounds.

Truck, Tractor, Shovel and Diesel maintenance men will find this set a valuable addition to their equipment.

No. HD-385—Heavy Duty Socket Set in Metal Case ..... *129.23* \$64.70

No. H-396—Metal Box Only (as illustrated) ..... 4.50

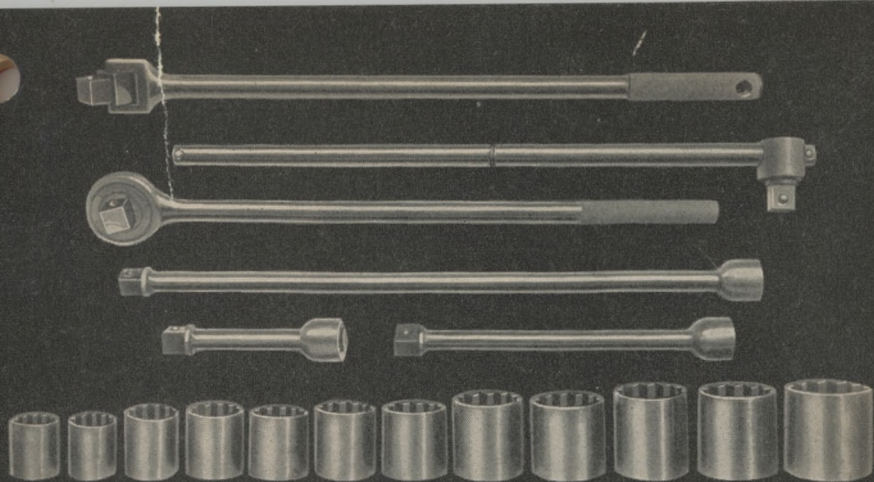
## No. HD-387 Heavy Duty Set

With Extra Length Sockets

This New Set is the same as illustrated above except that it contains the extra length sockets as listed and illustrated on page 26.

No. HD-387—Heavy Duty Socket Set in Metal Case ..... \$78.50

No. H-398—Metal Case (only) 5" x 9" x  $22\frac{1}{2}$ " ..... 4.95



### No. HD-381 Heavy Duty Socket Set

A complete set of 19 Heavy Duty Sockets and Handles as listed below. This Heavy Duty set is designed to handle work on all kinds of heavy equipment such as Trucks, Tractors, Graders, Steam Shovels, etc., and for service work on all types of Industrial machinery. It is essential in every shop where this type of work is done. A real labor saving unit.

Set consists of 19 units as follows: 12 Heavy Duty 12 Point Sockets,  $1\frac{1}{8}$ ",  $1\frac{1}{4}$ ",  $1\frac{1}{2}$ ",  $1\frac{3}{4}$ ",  $1\frac{7}{8}$ ",  $1\frac{1}{2}$ ",  $1\frac{5}{8}$ ",  $1\frac{1}{2}$ ",  $1\frac{3}{4}$ ",  $1\frac{1}{2}$ " and 2", 3 extensions,  $4\frac{1}{2}$ ", 10", and 18", 20" Sliding Tee Bar, 20" Flex Handle, Heavy Duty Ratchet, and Heavy Steel Carrying Case.

No. HD-381—Heavy Duty Socket Set in Metal Case .....	\$41.80
No. H-391—Metal Case (only) .....	3.00

### No. HD-386 Heavy Duty Socket Set

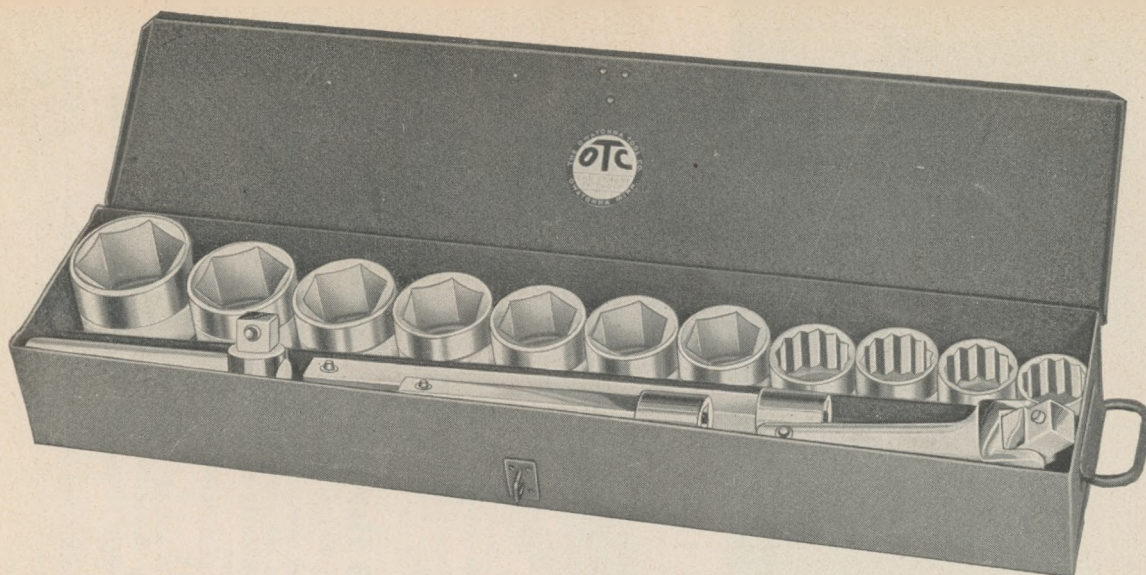
With Extra Length Sockets

A new Heavy Duty Socket set which includes the same units as shown above except that it contains the extra length sockets as listed and described on page 26. It is a particularly good set for all types of industrial and heavy machinery maintenance.

This set includes 20 units as follows: 13 Heavy Duty Extra Length Sockets,  $1\frac{1}{8}$ ",  $1\frac{1}{4}$ ",  $1\frac{1}{2}$ ",  $1\frac{3}{4}$ ",  $1\frac{7}{8}$ ",  $1\frac{1}{2}$ ",  $1\frac{5}{8}$ ",  $1\frac{1}{2}$ ",  $1\frac{3}{4}$ ",  $1\frac{1}{2}$ ",  $1\frac{1}{2}$ ",  $1\frac{1}{2}$ " and 2", three Extensions  $4\frac{1}{2}$ ", 10" and 18", a 20" Sliding Tee Bar, 20" Flex Handle, 20" Ratchet and Heavy Metal Box. See top of page 26 for sockets in this set. The steel box is 5" deep, 9" wide,  $22\frac{1}{2}$ " long and weighs 15 pounds.

No. HD-386—Heavy Duty Socket Set in Metal Box .....	\$55.20
No. H-398—Metal Box (only) 5" x 9" x $22\frac{1}{2}$ " .....	4.95





### \*Giant Socket Set

No. G-18

1 1/4" Square Drive

For Speed, Satisfaction and Safety the new OTC Giant Socket Set is second to none. An ideal set for use in Mines, Mills, Utility Plants, on Steam Turbines, Diesel Motors, Shovels and other heavy equipment.

It contains 11 Sockets from 2 1/8" to 3 1/2", Stub Flex Handle and Stub Tee Handle for use with 36" Tubular extension handle, two Extensions 10" and 18" in a substantial heavy steel case. All sockets are accurately forged to size and the handles built to withstand hard usage. Handles and Extensions are equipped with compression plug and spring which locks each socket with a positive lock onto the handle.

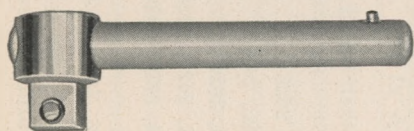
Weight 102 pounds. Transportation by freight prepaid.

No. G-18—Giant Socket Set Complete in Box ..... \$129.30  
No. G-90—Metal Box only, 39" x 8" x 5"—24lbs. .... 7.95

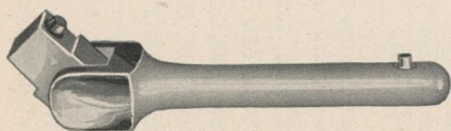
### Table of Socket Sizes

No.	Opening	Price	No.	Opening	Price	No.	Opening	Price
*G-68	2 1/8"	\$4.50	G-80	2 1/2"	\$7.75	G-94	2 1/8"	\$11.00
*G-70	2 3/16"	5.25	G-82	2 1/8"	8.25	G-100	3 1/8"	13.50
*G-72	2 1/4"	5.90	G-84	2 5/8"	8.75	G-112	3 1/2"	16.75
*G-76	2 3/8"	6.75	G-88	2 3/4"	9.20			

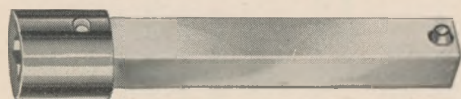
\*12 Point Sockets—all others are hex.



No. G-87



No. G-77



No. G-73

### \*Giant Tee Handle

A tee handle which may also be used with the 36" pipe extension. Sufficiently strong for the heaviest work and an ideal handle for use with either of the extensions listed below.

No. G-87—Giant Tee Handle 10" long .....\$4.50

### \*Giant Flex Handle

A specially designed handle for use with Giant Sockets. It is 10" long and to obtain sufficient leverage it is used with the 36" seamless steel, tubular handle listed below. The hinged joint permits working in close quarters.

No. G-77—Giant Flex Handle 10" long .....\$7.50

### \*Giant Extensions

Built of 1 1/4" Square Chrome Vanadium and strong enough to resist bending or twisting on the hardest pull. Very necessary to provide clearance and especially suited for use on either one of the above handles.

No. G-73—10" Giant Extension .....\$3.25  
No. G-74—18" Giant Extension ..... 4.25

### \*Tubular Handle



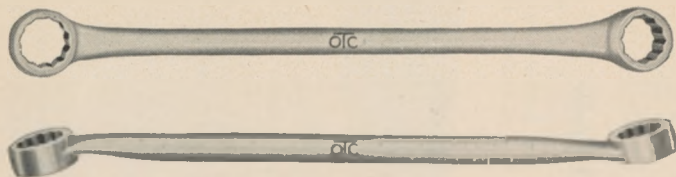
A seamless steel tubular handle for use with either the No. G-77 or G-87 Handles. Exceptionally strong and will not bend. 36" long.

No. M-36—Extension Handle ..... \$4.25



## oTc Twelve Point Box Wrenches

15° Angle



Despite the flood of cheap and inferior quality Box Wrenches on the market and a natural temptation to meet competition by substituting low grade materials, oTc has continued to build a superior wrench without sacrificing the fine quality of which we are so proud.

These wrenches are light in weight, exceptionally strong and the 15° angle makes them practical on all kinds of work. Wrench numbers preceded by the letter "S" designates Short Pattern, all others are long pattern.

No.	Sizes	Length	Price	No.	Sizes	Length	Price
S-1214	$\frac{3}{8}$ " x $\frac{7}{8}$ "	4 $\frac{3}{4}$ "	\$0.75	2024	$\frac{5}{8}$ " x $\frac{3}{4}$ "	12 "	\$1.15
S-1416	$\frac{1}{8}$ " x $\frac{1}{2}$ "	5 "	.80	2224	$\frac{11}{16}$ " x $\frac{3}{4}$ "	12 "	1.25
1416	$\frac{1}{8}$ " x $\frac{1}{2}$ "	6 "	.90	2425	$\frac{3}{4}$ " x $\frac{11}{16}$ "	12 $\frac{3}{4}$ "	1.40
S-1618	$\frac{1}{2}$ " x $\frac{9}{16}$ "	5 $\frac{1}{2}$ "	.90	2428	$\frac{3}{4}$ " x $\frac{7}{8}$ "	13 $\frac{1}{2}$ "	1.40
1618	$\frac{1}{2}$ " x $\frac{9}{16}$ "	7 "	.95	2628	$\frac{13}{16}$ " x $\frac{7}{8}$ "	13 $\frac{1}{2}$ "	1.60
S-1820	$\frac{9}{16}$ " x $\frac{5}{8}$ "	6 $\frac{1}{2}$ "	.95	3034	$\frac{13}{16}$ " x $1\frac{1}{8}$ "	15 $\frac{1}{2}$ "	2.20
1820	$\frac{9}{16}$ " x $\frac{5}{8}$ "	8 $\frac{1}{2}$ "	1.00	3236	1 " x $1\frac{1}{8}$ "	17 "	2.30
2022	$\frac{5}{8}$ " x $1\frac{1}{8}$ "	10 "	1.10	3840	$1\frac{3}{16}$ " x $1\frac{1}{4}$ "	18 "	2.75

The sets listed below are suggested because of their utility, the wide range of work they will handle and because there are no duplication of sizes.

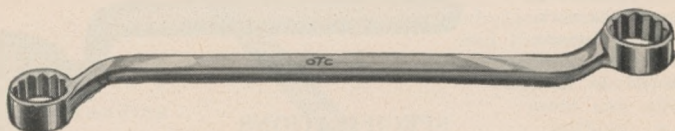
No. 4L Set contains wrenches 1416, 1820, 2224, 2628 .....	\$ 4.75
No. 4S Set contains wrenches S1214, S1618, 2022, 2428 .....	4.15
No. 4 Set contains wrenches S1214, 1618, 2024, 2628 .....	4.45
No. 5 Set contains wrenches S1214, 1618, 2022, 2425, 2628 .....	5.80
No. 7 Set contains wrenches S1214, 1618, 2024, 2628, 3034, 3236, 3840 .....	11.70
No. 8 Set contains wrenches S1214, 1618, 2022, 2425, 2628, 3034, 3236, 3840 .....	13.05

Where sets are purchased, wrench kits are furnished free of charge.

## oTc Offset Box Wrenches

The Offset pattern Box Wrench is offered for those maintenance men who prefer it to the 15° angle wrench. The offset is short, providing ample clearance, and not too great to permit the wrench to tip on a hard pull.

This type of wrench is adaptable to all kinds of motor maintenance work and provides extreme accessibility since either side of the wrench can be used with equal facility.



No.	Openings	Length	Price	No.	Openings	Length	Price
A-1214	$\frac{3}{8}$ " x $\frac{1}{8}$ "	4½"	\$0.50	B-2022	$\frac{5}{8}$ " x $\frac{1}{8}$ "	9¾"	\$ .85
A-1618	$\frac{1}{2}$ " x $\frac{9}{16}$ "	5¼"	.65	B-2426	$\frac{3}{4}$ " x $\frac{1}{8}$ "	11 "	.95
A-2022	$\frac{5}{8}$ " x $\frac{1}{8}$ "	6 "	.70	B-2830	$\frac{7}{8}$ " x $\frac{1}{8}$ "	12 "	1.10
B-1214	$\frac{3}{8}$ " x $\frac{1}{8}$ "	6½"	.65	B-3234	1 " x $\frac{1}{16}$ "	16 "	1.90
B-1618	$\frac{1}{2}$ " x $\frac{9}{16}$ "	7½"	.70	B-3640	1½" x $\frac{1}{4}$ "	18 "	2.25
B-1820	$\frac{9}{16}$ " x $\frac{5}{8}$ "	8½"	.80	B-4648	1¾" x $\frac{1}{2}$ "	20 "	2.65
B-1922	$\frac{1}{2}$ " x $\frac{1}{8}$ "	9½"	.85				

A minimum of duplication in sizes recommends the sets listed below. Only in two sets will the same sizes be found and these duplicated sizes will be found to be the most popularly used.

No. A-3 Set contains wrenches A-1214, A-1618, A-2022 .....\$1.85

No. B-5 Set contains wrenches B-1214, B-1618, B-2022, B-2426,  
B-2830 ..... 4.25

No. B-3 Set contains wrenches B-3234, B-3640, B-4648 ..... 6.80

No. B-6 Set contains wrenches B-1214, B-1618, B-1820, B-2022,  
B-2426, B-2830 ..... 5.05

No. B-9 Set contains wrenches B-1214, B-1618, B-1820, B-2022,  
B-2426, B-2830, B-3234, B-3640, B-4648 .....11.85

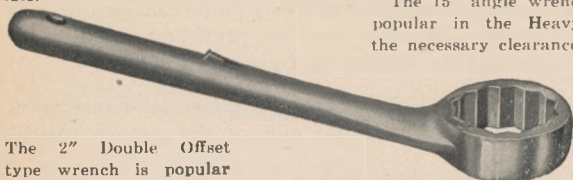
Where sets are ordered, kits are furnished free of charge.

While the straight type wrench provides no clearance for obstructions, it is nevertheless, a very practical wrench where work is accessible.

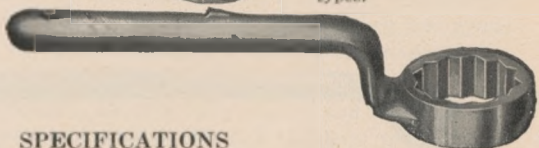
## oTc Heavy Duty Box Wrenches



The 15° angle wrench has been proven the most popular in the Heavy Duty Series. It provides the necessary clearance for work when obstructions



The 2" Double Offset type wrench is popular where extra clearance is needed close to the work. There are many instances where this type of wrench would be very necessary.



must be considered and at the same time permits a straight, efficient pull. Undoubtedly the most practical of the three types.

### SPECIFICATIONS

Opening Size	Head Thickness	Shank Size	For Handle No.	Straight		15° Offset		Double Offset	
				No.	Price	No.	Price	No.	Price
$\frac{7}{8}$ "	$\frac{11}{16}$ "	$\frac{7}{8}$ "	M-28	MS- 28	\$1.65	MA- 28	\$1.75	MO- 28	\$1.85
$\frac{1}{8}$ "	$\frac{1}{8}$ "	$\frac{7}{8}$ "	M-28	MS- 30	1.75	MA- 30	1.85	MO- 30	1.95
1	$\frac{11}{16}$ "	$\frac{7}{8}$ "	M-28	MS- 32	1.75	MA- 32	1.85	MO- 32	1.95
$1\frac{1}{16}$ "	$\frac{11}{16}$ "	$\frac{7}{8}$ "	M-28	MS- 34	1.75	MA- 34	1.90	MO- 34	2.00
$1\frac{1}{8}$ "	$\frac{11}{16}$ "	$\frac{7}{8}$ "	M-28	MS- 36	1.80	MA- 36	1.95	MO- 36	2.10
$1\frac{1}{4}$ "	$\frac{11}{16}$ "	$\frac{7}{8}$ "	M-28	MS- 40	1.85	MA- 40	1.95	MO- 40	2.15
$1\frac{5}{16}$ "	$\frac{11}{16}$ "	$\frac{7}{8}$ "	M-28	MS- 42	2.25	MA- 42	2.50	MO- 42	2.85
$1\frac{3}{8}$ "	$\frac{11}{16}$ "	$\frac{7}{8}$ "	M-28	MS- 44	2.85	MA- 44	2.95	MO- 44	3.45
$1\frac{7}{16}$ "	$\frac{11}{16}$ "	$\frac{7}{8}$ "	M-28	MS- 46	2.85	MA- 46	2.95	MO- 46	3.45
$1\frac{1}{2}$ "	$\frac{11}{16}$ "	$\frac{7}{8}$ "	M-28	MS- 48	3.30	MA- 48	3.40	MO- 48	3.70
$1\frac{5}{8}$ "	1 "	1 "	M-32	MS- 52	3.65	MA- 52	3.75	MO- 52	4.35
$1\frac{11}{16}$ "	1 "	1 "	M-32	MS- 54	3.70	MA- 54	3.85	MO- 54	4.45
$1\frac{3}{4}$ "	1 "	1 "	M-32	MS- 56	3.75	MA- 56	3.90	MO- 56	4.55
$1\frac{13}{16}$ "	$1\frac{1}{16}$ "	1 "	M-32	MS- 58	3.85	MA- 58	3.95	MO- 58	4.75
$1\frac{7}{8}$ "	$1\frac{1}{8}$ "	1 "	M-32	MS- 60	4.60	MA- 60	4.75	MO- 60	5.50
2	$1\frac{1}{8}$ "	1 "	M-32	MS- 64	4.60	MA- 64	4.75	MO- 64	5.50
$2\frac{1}{16}$ "	$1\frac{1}{8}$ "	1 "	M-32	MS- 66	4.75	MA- 66	4.95	MO- 66	5.60
$2\frac{1}{8}$ "	$1\frac{1}{8}$ "	1 "	M-32	MS- 70	5.20	MA- 70	5.50	MO- 70	6.10
$2\frac{1}{4}$ "	$1\frac{1}{4}$ "	1 "	M-32	MS- 72	5.60	MA- 72	5.90	MO- 72	6.50
$2\frac{3}{8}$ "	$1\frac{1}{2}$ "	$1\frac{1}{8}$ "	M-36	MS- 76	8.50	MA- 76	9.00	MO- 76	9.50
$2\frac{9}{16}$ "	$1\frac{1}{2}$ "	$1\frac{1}{8}$ "	M-36	MS- 82	9.25	MA- 82	9.75	MO- 82	10.75
$2\frac{3}{4}$ "	$1\frac{1}{2}$ "	$1\frac{1}{8}$ "	M-36	MS- 88	9.75	MA- 88	10.50	MO- 88	11.50
$2\frac{11}{16}$ "	$1\frac{1}{2}$ "	$1\frac{1}{8}$ "	M-36	MS- 94	10.75	MA- 94	11.25	MO- 94	12.25
$3\frac{1}{8}$ "	$1\frac{1}{2}$ "	$1\frac{1}{8}$ "	M-36	MS-100	11.25	MA-100	12.00	MO-100	13.00



## oTc Master Series Heavy Duty Box Wrenches

oTc's answer to its friends' many requests for "power tools" is a complete line of Heavy Duty Box Wrenches.

They provide more leverage—more power on the extremely tough job of turning large bolts and nuts. Strong enough to withstand terrific abuse and hard usage. Yet light and well

balanced for ease of handling and operation. Being built for power they are

especially useful on Tractors, Trucks,

Steam Shovels, Road Machinery,

Pumps, Diesel Motors, Industrial

production machinery, Marine

and Railroad work. No well

equipped shop servicing

any of the above equip-

ment can afford to be

without a set of

these heavy serv-

ice wrenches.

Drop - forged.

### Tubular Handles

County and State

Highway departments,

utilities and transportation

companies have found these

wrenches most practical for

servicing large Trucks, Tractors,

Diesel Motors, Steam Shovels,

Pumps and Generators where great

power is necessary in cinching or break-

ing loose large bolts and nuts.

Three seamless, all steel tubular handles

are required to fit all twenty-one sizes. Built of

special material to withstand excessive pressure

these handles provide the necessary leverage for the

large size wrenches. A special locking device allows

these handles to be used interchangeably with the dif-

ferent size wrenches, yet is strong enough to prevent their

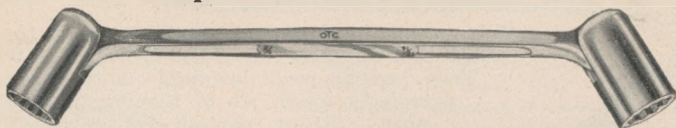
turning or slipping off the wrench.

### TUBULAR HANDLES FOR MASTER BOX WRENCHES



Handle No.	Length	Outside Dia.	Inside Dia.	Price
M-28	24"	1 1/8"	7/8"	\$2.25
M-32	30"	1 1/4"	1 "	3.25
M-36	36"	1 1/2"	1 1/8"	4.25

## Improved Flex Wrenches



An improved wrench which combines all the good features of a box wrench with the practical usefulness of a universal socket.

Having a swivel socket at each end these wrenches can be adjusted to work at any angle within 90°. Each socket is held in working position with a compression ball and spring working in the handle against the socket wall. Sockets are closely coupled to permit working in close quarters. The handle is designed so that the pull is exerted against the rounded edge of the handle instead of against the flat side, which permits a harder pull without hurting the hands.

These wrenches are ideal for production and maintenance work alike. Maintenance men particularly will find them indispensable and the handiest wrench they ever used.

No charge for leatherette kit when sets are purchased.



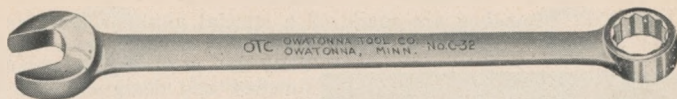
### STANDARD SIZES

No.	Openings	Length	Price
F-1214	$\frac{3}{8}$ " x $\frac{1}{8}$ "	6 $\frac{1}{4}$ "	\$1.50
F-1618	$\frac{1}{2}$ " x $\frac{3}{16}$ "	7 $\frac{1}{2}$ "	1.65
F-1820	$\frac{9}{16}$ " x $\frac{5}{8}$ "	8 $\frac{1}{2}$ "	1.80
F-2022	$\frac{5}{8}$ " x $\frac{11}{16}$ "	12 "	2.15
F-2224	$\frac{11}{16}$ " x $\frac{3}{4}$ "	9 $\frac{3}{4}$ "	2.00
F-2628	$\frac{13}{16}$ " x $\frac{7}{8}$ "	10 $\frac{3}{4}$ "	2.25

No. F-25—Set of 5 Wrenches, F-1214, F-1618, F-1820, F-2224, F-2628 \$9.20



## Combination Wrenches



The advantages of the Combination open end and Box end wrench are readily recognized. This type of wrench has won the approval of thousands of maintenance men and its popularity has increased at such a rapid pace that oTc has decided to add larger sizes in a long series.

These wrenches have the same opening on each end. The open end is set at an angle of 15° which is the accepted angle for efficiency and ease of operation. The Box end is 12 point and is also set at an angle of 15° to provide necessary clearance.

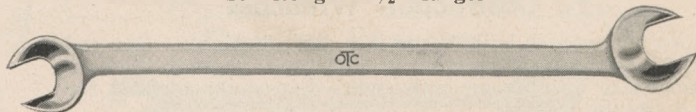
No.	Opening	Length	Price	No.	Opening	Length	Price
C-12	$\frac{3}{8}$ "	5"	\$0.75	C-28	$\frac{7}{8}$ "	11"	\$1.35
C-14	$\frac{7}{16}$ "	5 $\frac{3}{8}$ "	.80	C-30	$1\frac{1}{8}$ "	13"	1.50
C-16	$\frac{1}{2}$ "	6"	.85	C-32	1"	13"	1.65
C-18	$\frac{9}{16}$ "	6 $\frac{3}{4}$ "	.90	C-34	$1\frac{1}{16}$ "	15"	1.80
C-20	$\frac{5}{8}$ "	7 $\frac{3}{4}$ "	1.00	C-36	$1\frac{1}{8}$ "	15"	2.15
C-22	$\frac{11}{16}$ "	8 $\frac{5}{8}$ "	1.10	C-40	$1\frac{1}{4}$ "	18"	2.25
C-24	$\frac{3}{4}$ "	9 $\frac{1}{2}$ "	1.20	C-42	$1\frac{5}{16}$ "	18"	2.50
C-26	$\frac{13}{16}$ "	11"	1.35	C-46	$1\frac{7}{8}$ "	21"	2.75

C-8—Set of first 8 sizes ..... \$7.95

C-7—Set of last 8 sizes ..... 15.95

## Extra Length Open End Wrenches

16" Long—22½° Angle



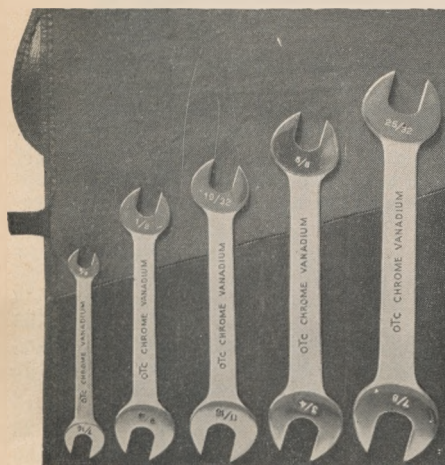
Especially designed to work on anchor nuts on Bendix and other mechanical brakes, both internal and external. Six popular sizes make these wrenches particularly practical for use on trucks, tractors and other heavy duty work. The extra long handles supply ample leverage for hard pulls. Plated finish.

No.	Opening	Length	Price
L-2428	$\frac{3}{4}$ " - $\frac{7}{8}$ "	16"	\$2.05
L-3034	$\frac{15}{16}$ " - $1\frac{1}{16}$ "	16"	2.25
L-3236	1" - $1\frac{1}{8}$ "	16"	2.25



## oTc Open End Wrenches

oTc Open End Wrenches are made of a special analysis Chrome Vanadium steel and heat treated to give maximum strength and toughness. They are perfectly balanced, finely finished and designed with a view to cover a great variety of work. The thin jaws are pear shaped and milled with care in order to assure a perfect fit.



No.	Length	Opening	Price
E1013	4 7/8"	5/16"-3/32"	\$0.40
E1214	4 7/8"	3/8"-1/8"	.50
E1416	6 1/2"	1/8"-1/2"	.55
E1618	6 3/8"	1/2"-9/16"	.60
E1820	7 1/4"	9/16"-5/8"	.75
E1922	7 3/8"	3/2"-1 1/8"	.80
E2024	8 3/8"	5/8"-3/4"	.85
E2428	9 3/8"	3/4"-7/8"	1.00
E2528	9 3/8"	3/4"-7/8"	1.15
E3032	10 3/4"	1 1/8"-1"	1.70
E3440	12 1/4"	1 1/8"-1 1/4"	1.90
E3640	12 1/4"	1 1/8"-1 1/4"	1.95

## oTc Open End Wrench Sets

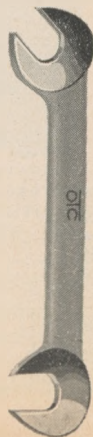
E-6—Set, one each 1013, 1214, 1618, 1922, 2024, 2528 .....	\$4.30
E-7—Set, one each 1013, 1214, 1618, 1922, 2024, 2528, 3032 .....	6.00
E-8—Set, one each 1013, 1214, 1618, 1922, 2024, 2528, 3032, 3440 .....	7.90
E-9—Set, one each 1013, 1214, 1618, 1922, 2024, 2528, 3032, 3440, 3640 ..	9.85

## oTc Obstruction Wrenches

An open end wrench built to get into difficult places. One end is set at 90 degrees and the other at 45 degrees angle to the handle. Same size opening on both ends. Especially adapted for use on hydraulic brakes.

No.	Opening	Length	Price
B-12	3/8"	5 1/2"	\$0.55
B-14	7/16"	5 1/2"	.60
B-16	1/2"	6 1/2"	.65
B-18	9/16"	6 1/2"	.70
B-20	5/8"	7 1/2"	.75
B-24	3/4"	7 1/2"	.85

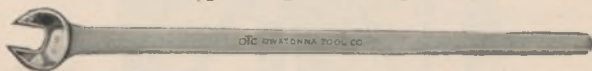
B-6—Set of six Above sizes .....\$4.10



**oTc Improved Tappet Wrenches**

The new oTc Tappet Wrenches, lighter and thinner than ever are built for use on the late model cars. The overall panel design provides added rigidity as well as beauty to this new set.

No.	Size Opening	Length	Price
O-1416	$\frac{7}{16}$ " x $\frac{1}{2}$ "	9 $\frac{1}{2}$ "	\$0.80
O-1618	$\frac{1}{2}$ " x $\frac{9}{16}$ "	9 $\frac{1}{2}$ "	.85
O-2022	$\frac{5}{8}$ " x $\frac{11}{16}$ "	9 $\frac{1}{2}$ "	.95
O-2428	$\frac{3}{4}$ " x $\frac{7}{8}$ "	9 $\frac{1}{2}$ "	1.05
No. O-7—Set of 4—two each of O-1416 and O-1618			\$3.30
No. O-9—Set of 6—two each of O-1416, O-1618 and O-2022			5.20
No. O-10—Set of 8—two each of 4 above sizes			7.30

**Extra Length Tappet Wrenches**12 $\frac{1}{2}$ " Long—15° Angle

Designed particularly for use on Plymouth, DeSoto, Dodge and Hupmobile where it is impossible to use a short wrench. Can also be used to advantage on other makes of cars. Long enough to clear hot manifolds and other obstructions. Heads are pear shaped and  $\frac{3}{16}$ " thick with a 15° angle for maximum efficiency.

No.	Opening	Length	Price	No.	Opening	Length	Price
O-12	$\frac{3}{8}$ "	12 $\frac{1}{2}$ "	\$ .90	O-18	$\frac{9}{16}$ "	12 $\frac{1}{2}$ "	\$ .90
O-14	$\frac{7}{16}$ "	12 $\frac{1}{2}$ "	.90	O-20	$\frac{5}{8}$ "	12 $\frac{1}{2}$ "	.95
O-16	$\frac{1}{2}$ "	12 $\frac{1}{2}$ "	.90	O-22	$\frac{11}{16}$ "	12 $\frac{1}{2}$ "	.95
O-17	$\frac{11}{16}$ "	12 $\frac{1}{2}$ "	.90				

**Coupling Wrenches**

Designed to operate over tubing and pipes in very close places. The double-broached openings permit a short turn. Ideal for use on fuel, oil and vacuum lines on cars, aircraft, refrigerators, air conditioning units, etc. These wrenches are not guaranteed.

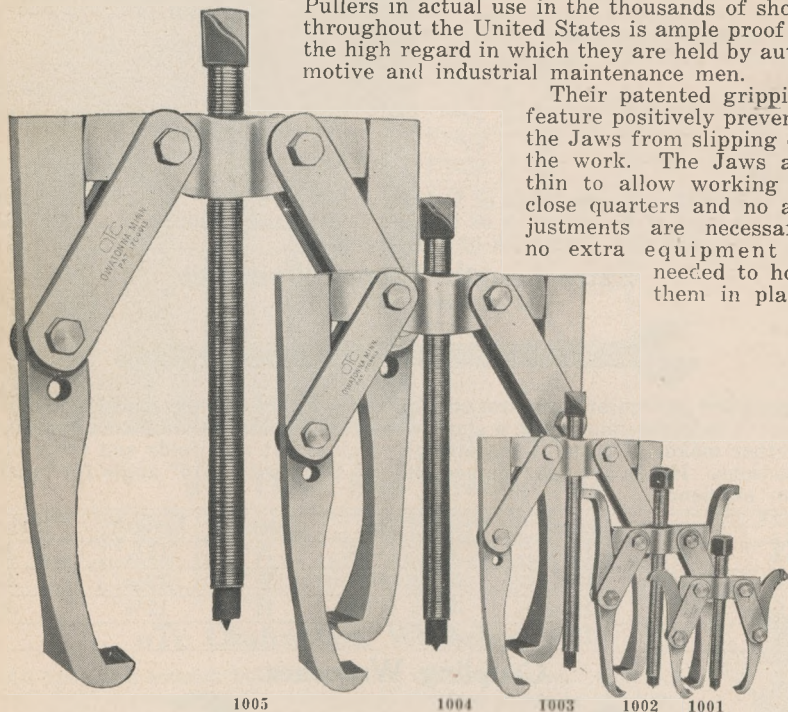
No.	Openings	Length	Slot	Price
CS-1214	$\frac{3}{8}$ " x $\frac{7}{16}$ "	5 $\frac{3}{4}$ "	$\frac{3}{16}$ " - $\frac{1}{4}$ "	\$1.00
CS-1618	$\frac{1}{2}$ " x $\frac{9}{16}$ "	6 $\frac{7}{8}$ "	$\frac{1}{8}$ " - $\frac{3}{8}$ "	1.25
CS-2022	$\frac{5}{8}$ " x $\frac{11}{16}$ "	8 "	$\frac{7}{16}$ " - $\frac{9}{16}$ "	1.50
No. CS-3 Set of 3 Above wrenches				\$3.75

**oTc Gripomatic Pullers**

Patent No. 1,709,913

**oTc Gripomatic Pullers** are recognized the entire country over as the ultimate in design, material and strength. The number of **oTc Gripomatic Pullers** in actual use in the thousands of shops throughout the United States is ample proof of the high regard in which they are held by automotive and industrial maintenance men.

Their patented gripping feature positively prevents the Jaws from slipping off the work. The Jaws are thin to allow working in close quarters and no adjustments are necessary, no extra equipment is needed to hold them in place.



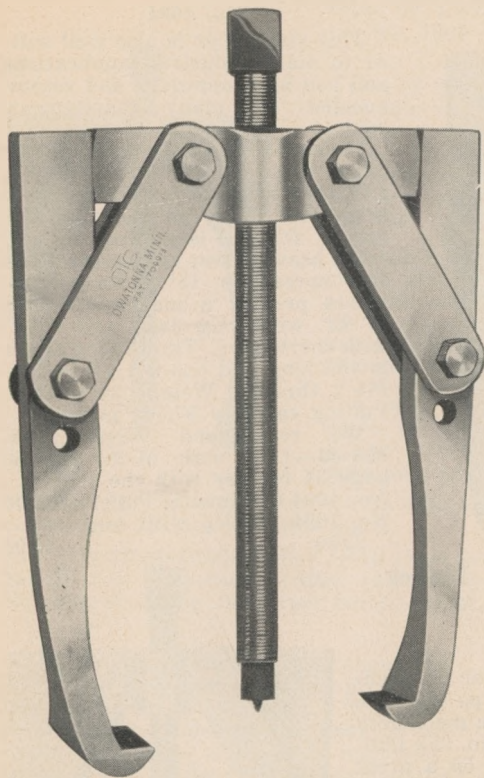
The safety features alone of **oTc Gripomatic Pullers**, should recommend them to all users of heavy maintenance tools. Thousands of dollars are spent for insurance, and at a minimum cost these pullers will give added protection against lost time accidents. In addition, the danger of damaging costly parts is reduced and parts which could not otherwise be removed, may be salvaged.

*All OTC Grip-o-matic Pullers are now equipped with forcing screws having the new POWER-PITCH thread which provides 32% more power than the conventional V-type thread.*



## Giant Gripomatic Puller

No. 1006



The largest of the oTc Pullers is particularly adapted to the removal of large wheels, gears, bearings, pulleys, sheaves, etc., on all types and kinds of industrial equipment. It will be found to be invaluable as a maintenance tool in railroad shops, mills, mines, power plants, pumping stations and manufacturing plants.

A New Power-Pitch thread is used on the 2" forcing screw which is 18" long and provides 32% more efficiency than the conventional V-type thread.

The patented, non-slipping, automatic gripping feature of this tool prevents damage to parts, saves time and reduces the danger of serious accidents.

Jaw spread or capacity is 30" with short Jaws and 36" with long Jaws. Maximum reach 36" with long Jaws and 24" with short Jaws. Tested under 85,000 pounds pressure. Weight 105 pounds.

We recommend the No. MA-76 Box Wrench with M-36 Handle page 34 for use with this puller.

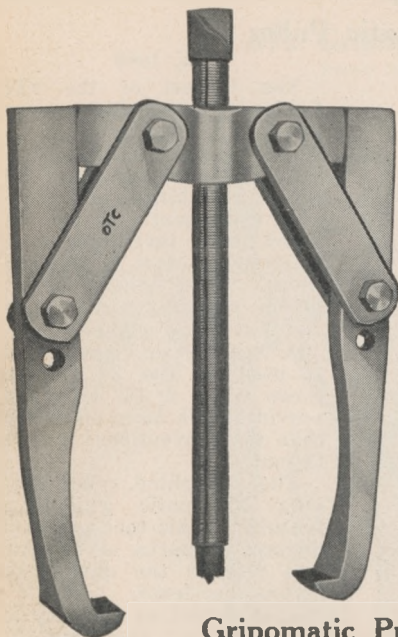
No. 1006—Gripomatic Puller .....	\$82.00
No. 1006—Gripomatic Puller with long Jaws .....	94.00

## Gripomatic Puller

No. 1005

This Puller equipped with long Jaws has a reach of 28" and 21½" with short Jaws. Maximum spread with long Jaws 26" and 20" with short Jaws. It has a 15" forcing screw with the new Power-Pitch thread. Capacity, 70,500 pounds. Weight 56 pounds. Wrench No. MA-60 with M-32 Handle is recommended for use with this puller.

No. 1005—Puller with short Jaws .....	\$47.50
No. 1005—Puller with long Jaws .....	55.00



### Gripomatic Puller

Patent No. 1,709,913

No. 1003 1/2

This puller is recommended for maintenance work on heavy crawler type tractors, power shovels, road maintenance machinery etc. Used with the No. 952 or No. 953 Pulling Attachment listed on page 55 a great variety of work can be accomplished.

This puller has a jaw spread of 14". Two adjustments permit a 4" variation in reach. The maximum being 18" with long Jaws and 14" with short Jaws. The screw is 12" long and has a 1" Power-Pitch thread. Pulling capacity is conservatively estimated at 40,000 pounds. Weight 23 pounds.

A No. MA-40 Box Wrench with M-28 Handle, page 34 is recommended for use with this puller.

No. 1003 1/2—Gripomatic Puller .....\$25.75

No. 1003 1/2—Puller with long Jaws .... 30.50

### Gripomatic Puller

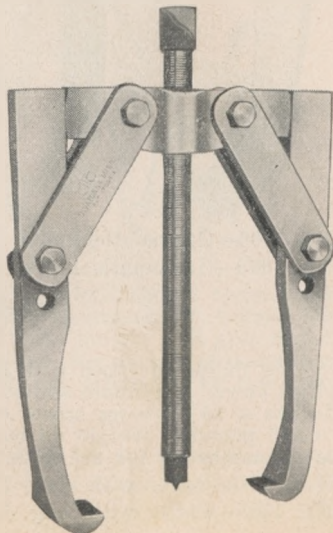
Patent No. 1,709,913

No. 1004

This size puller is also well suited to many industrial applications and has been approved and recommended by many maintenance men.

It can be used on essentially the same type of work as the No. 1005, but where less pulling power is needed. It is an ideal tool for use on Diesels, large tractors and other heavy power equipment. The jaw spread is 15". Its adjustments provide a maximum reach of 22" with long Jaws and 15 1/2" with short Jaws. The forcing screw is 15" long and has a 1 1/4" Power-Pitch thread. Weight 34 pounds. Pulling capacity 57,000 pounds.

We recommend Wrench No. MA-44—1 3/8" with M-28 Handle, page 34 for use with the Puller. No. 1004 Gripomatic Puller ..\$35.00  
No. 1004—Puller with long Jaws ..... 40.00

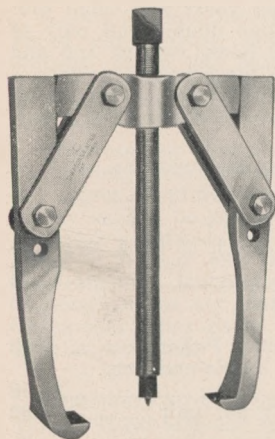




## Gripomatic Puller

Patent No. 1,709,913

No. 1003



One of the most versatile pullers in the OTC line, this tool will handle a great many of the pulling problems encountered on all makes of trucks. It will handle many jobs also on farm tractors and a number of tractor manufacturers have already approved and recommended this tool.

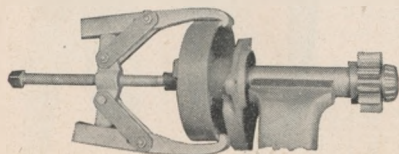
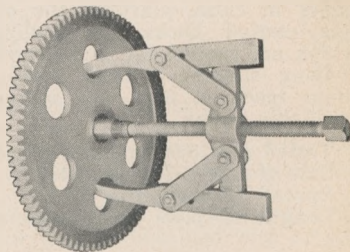
It has a jaw spread of 12". Its two adjustments give it a maximum reach of 9" and a minimum adjustment of 7". The screw is 12" long and has a  $\frac{3}{4}$ " power-pitch thread. It has a pulling capacity of approximately 30,000 pounds. Weight 10 pounds.

A pair of extra length jaws to provide a reach of 15" is available for use with this puller. The puller can be purchased with these jaws as original equipment if desired.

An S-128— $\frac{7}{8}$ " eight point socket with the H-176—15" Flex Handle is recommended for use with this puller.

No. 1003—Gripomatic Puller (with short jaws, as illustrated)	\$16.50
No. 1003-C—Gripomatic Puller (with 1003-A long jaws)	18.50
No. 1003-A—Long Jaws (per pair)	8.50

The illustration at the right shows the No. 1003 Gripomatic Puller pulling a large gear from the shaft. The jaws hook into the holes of the gear or between the spokes where it is impossible to get a grip at the circumference of the part to be pulled. The positive grip prevents the jaws from slipping regardless of the pressure exerted.

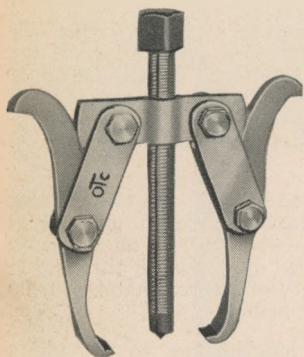


The picture at the left shows another typical job which the No. 1003 Gripomatic Puller does with ease. In this case the jaws of the puller hook over the rim of the drum and the part is pulled in this manner. No clamps or other accessories are necessary to hold the jaws in place. The more

power applied, the harder the jaws grip.



## Gripomatic Puller No. 1001



Is particularly adapted to pulling generator gears, ball races, timing gears and small pinions. Equipped with one double end pair of jaws, having wide thin hooks on one end and narrow thick hooks on the other.

Long single-end Jaws with a maximum reach of  $5\frac{1}{2}$ " are also available with this puller.

Tested for 12,900 pounds pressure.

Size of screw,  $\frac{1}{8}$ " diameter by 6" long.

Spread of jaws,  $\frac{1}{2}$ " to 6".

Length of jaw from block to hook,  $3\frac{1}{4}$ ".

Jaws, each .....	\$1.40
Power-Pitch Screw, each .....	1.10
Forged Head, each .....	1.25
No. 1001—oTc Gripomatic Puller .....	5.50
No. 1001—Puller with single-end long Jaws .....	\$6.50
Single-end Jaws (only) per pair .....	3.80

## Gripomatic Puller No. 1002

This is an "all purpose" tool and will handle a very wide range of work. The pulling arms are "reversible," one end having wide thin hooks to get behind gears in close quarters, the other end has slotted hooks for pulling gears which are tapped for cap screws.

Long single-end Jaws with a maximum reach of  $8\frac{1}{2}$ " are also available with this puller.

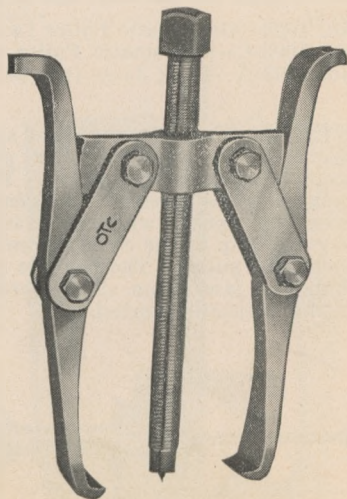
Tested for 18,000 pounds pressure.

Size of screw,  $\frac{1}{8}$ " diameter by 9" long.

Spread of jaws, 8".

Length of jaws from block to hook,  $5\frac{1}{2}$ ".

Jaws, each .....	\$ 2.25
Power-Pitch Screw, each .....	2.25
Forged Head, each .....	3.25
No. 1002—oTc Gripomatic Puller ..	11.00
No. 1002—Puller with single-end long Jaws .....	\$12.50
Single-end Jaws (only) per pair ....	6.00



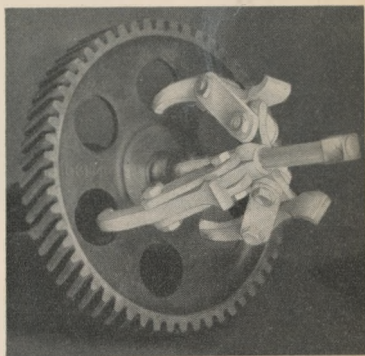
oTc Gripomatic Pullers are Cheapest in the long run.

## Three-Jaw Gripomatic Pullers

Patent No. 1,709,913

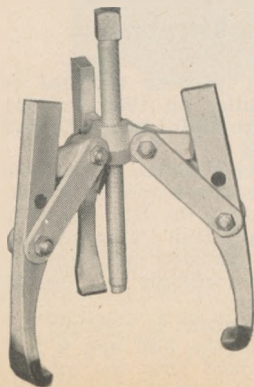
A new product incorporating the patented non-slipping feature of all oTc Pullers, which has been designed to do pulling jobs that cannot be handled with a two jaw puller.

An extremely useful and practical tool for pulling gears which are not tapped for cap screws and on which a two jaw puller cannot be applied. This tool can be applied between the spokes or in the holes of a gear and the part pulled in this manner. It can also be used to pull bearings, races, etc., on generators, magnetos and other parts where a positive grip is essential.



Customers already having Two-Jaw Pullers need only purchase the 3-way forged Head and one jaw assembly to obtain the advantages of this puller. Customers who want both types need only purchase a Three-Jaw Puller and the 2-way forged Head of the corresponding size to obtain the advantages of both tools. Jaws, forcing screw, straps and cap screws are interchangeable. Prices in table following are with short jaws.

Tool No.	3-Way Head	2-Way Head	Jaws Each	Screw Each	Capac.	Weight	Price Ea. 3-Jaw
1011	\$1.75	\$1.25	\$1.40	\$1.10	6"	2lbs.	\$ 7.90
1012	3.80	3.25	2.25	2.25	8"	5lbs.	14.85
1013	5.90	4.50	3.25	4.25	12"	15lbs.	21.75

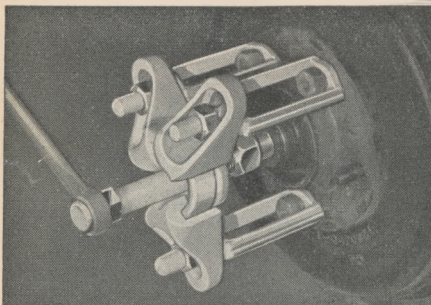


This illustration shows the largest of the 3 Jaw Pullers. In capacity it compares with the No. 1003 Puller shown on page 43. Like the others it has the automatic gripping feature but only single-end jaws are available for it.

The two smaller sizes, Nos. 1011 and 1012 have double-end jaws or may be obtained with single-end jaws. The table below shows specifications on 3-Jaw pullers with long jaws.

No.	reach with long jaws	Capacity	Weight	Price
1011-B	5½"	0" to 8"	2½ lbs.	\$ 9.40
1012-B	8½"	0" to 10"	5½ lbs.	17.10
1013-B	15 "	0" to 14"	13 lbs.	24.75

Large 3-way Pullers available on special order only.



### oTc Universal Hub Puller No. 826

This Hub Puller can be adjusted to handle any car or light truck, whose Hub Bolt circle does not exceed 7½". It is easily adjusted and quickly adapted to any Hub regardless of the number of wheel studs used. Because of its exceptionally wide range of service it is an invaluable tool in every repair shop, brake shop and other specialized service stations.

The pull is straight thereby eliminating the danger of bending or distorting the wheel lugs. There is NO Hub within its range too difficult for this Puller to remove.

No. 826—Universal Hub Puller ..... \$15.50

### Knock-Off Wheel Pullers

Properly used the oTc Knockoffs will do a quick efficient job on 98% of all cars, without danger of damage to rear axle parts. They are fully tapped to the bottom, which eliminates the possibility of upsetting the axle or ruining the threads on the axle or in the puller.



No.	Size	Length	Price	No.	Size	Length	Price
K-20	5/8"-SAE	3½"	\$0.85	K-48	1½"-SAE	2½"	\$2.50
K-24	¾"-SAE	3½"	.95	K-25	¾"-20	3½"	1.00
K-28	7/8"-SAE	3½"	1.05	K-26	1½"-16	3½"	1.00
K-32	1"-SAE	3½"	1.15	K-29	7/8"-18	3½"	1.25
K-36	1½"-SAE	3½"	1.25	K-41	1¼"-7	2½"	2.00
K-40	1¼"-SAE	2½"	2.00				

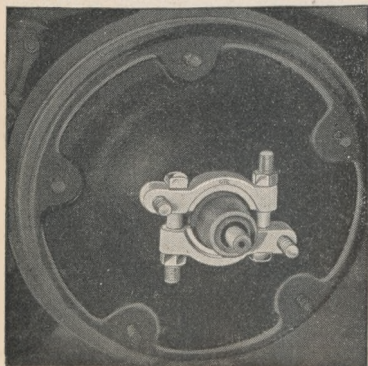
### V-8 Hub Attachment No. 826-V

This attachment permits the use of any good Hub Puller on 1936 to 1941 V8 Ford and 1936 to 1940 Lincoln Zephyr Hubs.

Due to the extreme radius of the Hub bolt circle on these cars a special attachment which clamps on the Hub flange is necessary. Ordinary Hub Pullers do not have a range of expansion large enough to pull these hubs without the use of such an attachment.

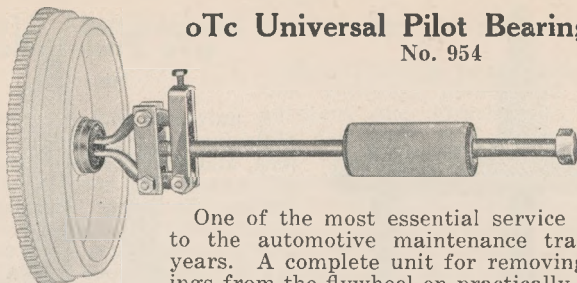
The 826-V Attachment is clamped behind the flange on the hub and a hub Puller is then hooked onto the attachment studs.

No. 826-V Hub Puller Attachment \$3.95





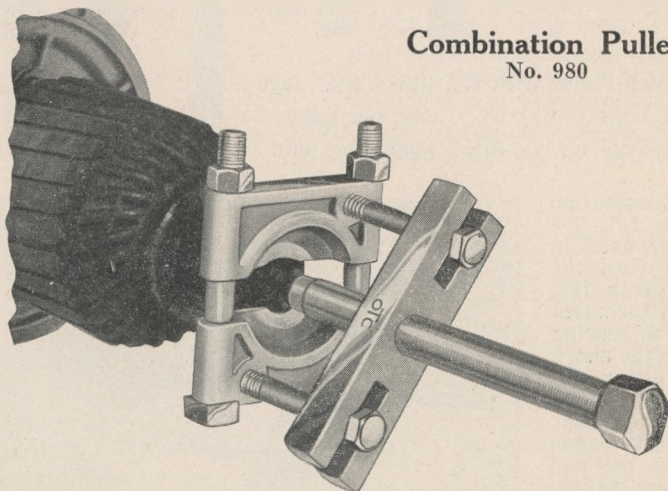
## oTc Universal Pilot Bearing Puller No. 954



One of the most essential service tools offered to the automotive maintenance trade in many years. A complete unit for removing pilot bearings from the flywheel on practically all makes of cars and trucks. It can also be used effectively to pull motor, generator and magneto bearings, or on any inside pulling job within the capacity of the tool. No other tool on the market is so universally adapted to this work: The jaws of the puller are adjustable from  $\frac{1}{2}$ " to  $1\frac{1}{4}$ " inside diameter, which range covers a majority of pilot bearings. The Sliding Hammer provides the force necessary to remove the most stubborn bearing.

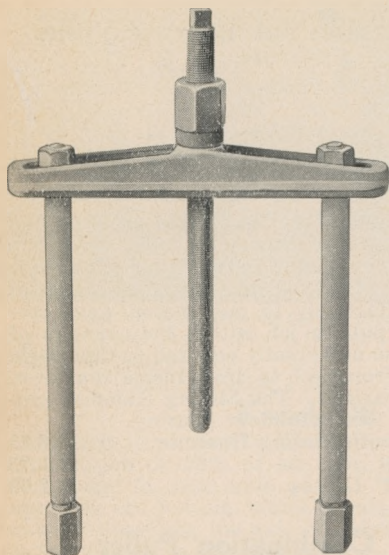
No. 954—Pilot Bearing Puller complete with Sliding Hammer .....	\$6.25
No. 954—With Heavy Duty Jaws .....	6.75
Heavy Duty Jaws only, capacity $\frac{7}{8}$ " to 2" ID .....	2.00

## Combination Puller No. 980



This puller is designed especially for removing bearings, gears, races etc. on motors, magnetos, and generators. It has a capacity for bearings and other parts up to  $2\frac{1}{4}$ ". The No. 950 Attachment which is a part of this tool is designed to pull against the inner race of a bearing and thus remove it without damage. This attachment can also be used separately with a Gear Puller or as a bed plate under an arbor press.

No. 980 Combination Puller (as illustrated) .....	\$7.00
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## Otc Push-Pullers

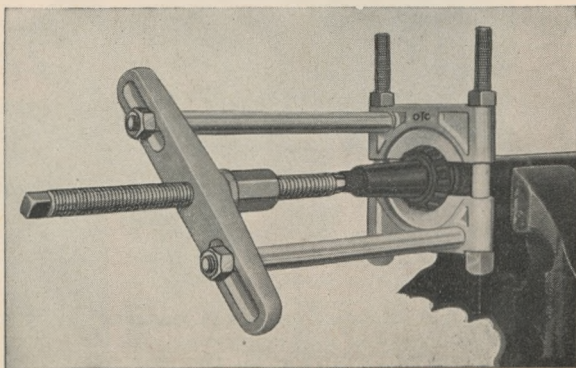
No. 913

A universal tool for removing and replacing bearings, gears, shafts, pinions, and other closely fitted parts on all makes and models of cars and trucks. By using this tool with the attachments and adaptors listed on the following pages many difficult jobs can be accomplished with a substantial saving in parts, time and labor.

The No. 913 Push-Puller can be used as a puller or a pusher as the name implies. Bearings, gears, and other parts can be replaced as well as removed with this tool by using the available attachments. Where a press is not available or assemblies cannot be taken to a press this feature will prove to be a valuable one.

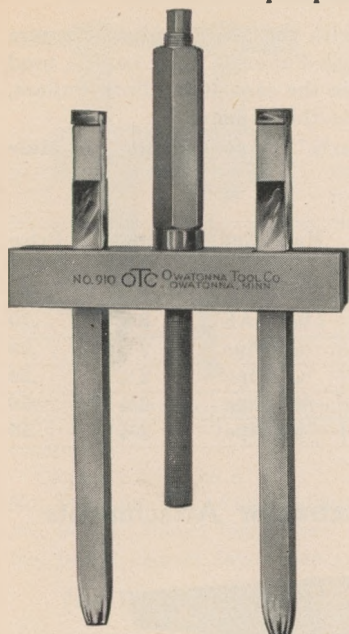
No. 913 Push-Puller with No. 913-A 9½" legs .....	\$11.75
No. 913-A Legs (only) 9½" long, per pair .....	2.25
No. 913-B Legs (only) 16½" long, per pair .....	2.50

This illustration shows the No. 913 Push-Puller used in connection with the No. 951 Bearing Pulling Attachment removing a bearing from an axle shaft. The bearing can be removed in this manner without damage. By using a threaded adaptor on the end of the shaft to obtain a pushing action this same combination will replace the bearing also.



No. 913 Push-Puller with No. 951 Pulling Attachment .....	\$21.00
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## No. 910 Multipurpose Puller and Its Attachments



The following pages are devoted to this universal puller and its various adaptors and attachments. This tool has met with such widespread success that more and more service men have become interested in its utility and the pulling problems it solves.

For over ten years the oTc Multi-Purpose Puller has been solving pulling problems in well equipped shops all over the United States. It has been proven to be by far the most universal and economical puller of its kind on the market. This tool works on all models and makes of cars, trucks and tractors and will continue to work on them for years to come. Spread over a ten year period the cost of a complete puller set would be negligible and still the set would be as modern and up-to-date tomorrow and next year as it is today.

New attachments which increase its scope and value can be added as the need arises. Tested at 43,900 pounds pressure.

No. 910—oTc Multi-Purpose Puller with 6 threaded adaptors,  $\frac{5}{8}$ " to  $1\frac{1}{4}$ "...\$11.30

### Threaded Adaptors



Threaded adaptors in a full range of sizes from  $\frac{5}{8}$ " SAE to  $1\frac{1}{2}$ " SAE and to  $1\frac{1}{2}$ " USS including several special sizes permit a range of utility on all types of threaded shafts including axles.

Cam shafts and Pinion shafts also fall within the range of this tool making it the most universal pulling tool of its kind ever built. For threaded adaptors with 1" female connection, see page 57.

### Adaptors

Item No.	Size	Price	Item No.	Size	Price
920	$\frac{5}{8}$ " SAE	\$0.45	948	$1\frac{1}{2}$ " SAE	\$0.80
924	$\frac{3}{4}$ " SAE	.45	925	$\frac{3}{4}$ " 20 Thread	.55
928	$\frac{7}{8}$ " SAE	.55	926	$\frac{1}{2}$ " 16 Thread	.55
932	1 " SAE	.55	929	$\frac{7}{8}$ " 18 Thread	.55
936	$1\frac{1}{8}$ " SAE	.65	941	$1\frac{1}{4}$ " USS	.65
940	$1\frac{1}{4}$ " SAE	.65	949	$1\frac{1}{2}$ " USS	.80





## Male Plug Adaptors

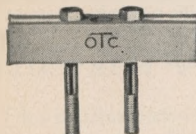


Male Plug Adaptors are utilized with the No. 910 Multi-Purpose Puller, the No. 913, 930 and 938 Push-Pullers. They can be used on the end of the forcing screws, or in the case of the Push-Pullers, threaded onto the leg ends for use in this manner.

The Male Plugs listed below have a  $\frac{5}{8}$ " NF connection. For Male Plugs having a 1" NF connection see page 57.

No.	Male End	Length	Price	No.	Male End	Length	Price
15-M	$\frac{3}{8}$ "-USS	2 $\frac{1}{4}$ "	\$0.50	29-M	$\frac{7}{8}$ "-USS	2 $\frac{1}{4}$ "	\$0.60
16-M	$\frac{1}{2}$ "-SAE	2 $\frac{1}{4}$ "	.50	32-M	1"-SAE	2 $\frac{1}{4}$ "	.65
17-M	$\frac{1}{2}$ "-USS	2 $\frac{1}{4}$ "	.50	36-M	1 $\frac{1}{8}$ "-SAE	2 $\frac{1}{4}$ "	.70
20-M	$\frac{5}{8}$ "-USS	2 $\frac{1}{4}$ "	.50	37-M	$\frac{1}{8}$ "-Pipe	2 $\frac{1}{4}$ "	.50
24-M	$\frac{3}{4}$ "-SAE	2 $\frac{1}{4}$ "	.50	39-M	$\frac{1}{4}$ "-Pipe	2 $\frac{1}{4}$ "	.50
25-M	$\frac{3}{4}$ "-USS	2 $\frac{1}{4}$ "	.50	41-M	$\frac{3}{8}$ "-Pipe	2 $\frac{1}{4}$ "	.50
28-M	$\frac{7}{8}$ "-SAE	2 $\frac{1}{4}$ "	.60	43-M	$\frac{1}{2}$ "-Pipe	2 $\frac{1}{4}$ "	.50

## No. 945 Attachment

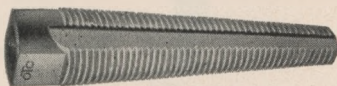


This attachment can be used with Pullers No. 910, 913, 930 or 938. It is especially useful for pulling main bearing caps, Crankshaft balancers, Fan Pulleys and Timing Gears.

No. 945 Pulling

Attachment ..\$2.50

## Bushing Extractor Attachments



Four sizes of these attachments are available for use with Pullers No. 913, 910, 930 and 938. Built primarily for the removal of bronze bushings located in blind holes. The tool cuts its own threads in the bushing and the pull is against the square shoulder of the thread.

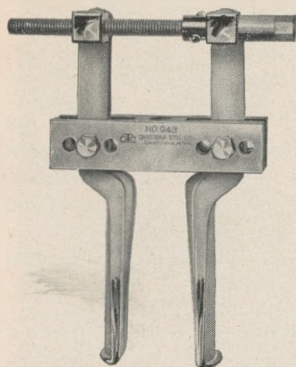
No. 931 Capacity  $\frac{1}{2}$ " to 1 $\frac{1}{8}$ " .....\$2.00

No. 933 Capacity 1" to 1 $\frac{1}{2}$ " ..... 2.50

No. 935 Capacity 1 $\frac{3}{8}$ " to 1 $\frac{1}{2}$ " ..... 3.00

No. 937 Capacity 1 $\frac{1}{2}$ " to 2 $\frac{3}{8}$ " ..... 3.50

## No. 943 Attachment



With this attachment used with pullers 910, 913, 930 or 938 it is possible to pull bearing races from front wheels on large trucks, power road maintainers and tractors of all kinds.

It also pulls races and bearings from rear axle housing on all cars, trucks, tractors, or any other machine where the bearing is removed after the axle, drive shaft or propeller shaft has been removed.

With this attachment also can be pulled Timken Bearing Cups from rear axle housing on Model A, AA, B, BB, V8 1932-39 Fords.

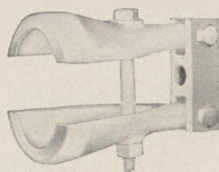
It will also remove and replace the graphite-impregnated brass collar used in Caterpillar clutches.

It Pulls rear axle grease retainers and Timkin Bearing cups from the rear axle housing on all makes and models of cars as well as many trucks and tractors.

Capacity  $1\frac{1}{2}$ " to 6".

No. 943—Bearing Cup Pulling Attachment .....	\$9.75
No. 943-A—Extra Long Jaws (per pair) .....	5.00
No. 943-C—Short Jaws (per pair) .....	2.50

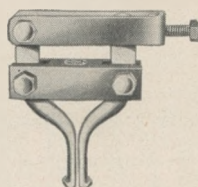
## No. 944 Attachment



Built for use with Pullers No. 910, 913, 930 and 938 and designed to move Pinions and bearings. Particularly effective on late model cars where hypoid gears are used. On practically all trucks the pinion shaft can be pulled from the housing when it comes out the rear.

No. 944 Pinion Pulling Attachment .....	\$5.00
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## No. 955 Attachment



Designed for use with Pullers No. 910, 913, 930 or 938 for pulling Pilot Bearings on cars, trucks and tractors. A very necessary tool in all maintenance shops.

No. 955 Pilot Bearing Puller	
$\frac{1}{2}$ " to $1\frac{1}{2}$ " .....	\$3.75
No. 956 Pilot Bearing Puller	
$\frac{7}{8}$ " to 2" .....	4.25
No. 956-A Heavy Duty Jaws (only) per pair .....	2.00



## PULLER DISPLAY BOARD

### Automotive Service Set

The board illustrated on the opposite page is designed for customer use.

To properly impress the car owner, who comes in for service, with his service equipment, the service man or garage owner should display his tools in an attractive manner. The car owner who sees such a display is immediately impressed and has confidence in the service man's ability to do good work. When tools are kept in a box or drawer and are hidden from view the car owner has no assurance that the service man is equipped to do his work.

In addition, a board of this kind furnishes a practical place for keeping such equipment. It is easily seen, removed and replaced. It can be kept in good condition and in this manner adds to the general appearance of the shop.

Puller Display Boards can be built to customers' specifications and will be built to include any oTc puller combination desired. Prices on display boards alone or complete with tools will be furnished on request.

Any customer already having a set of oTc Pullers and who would like to take advantage of this offer need only give us the numbers of his oTc Pullers and the size of the space available for the display board.

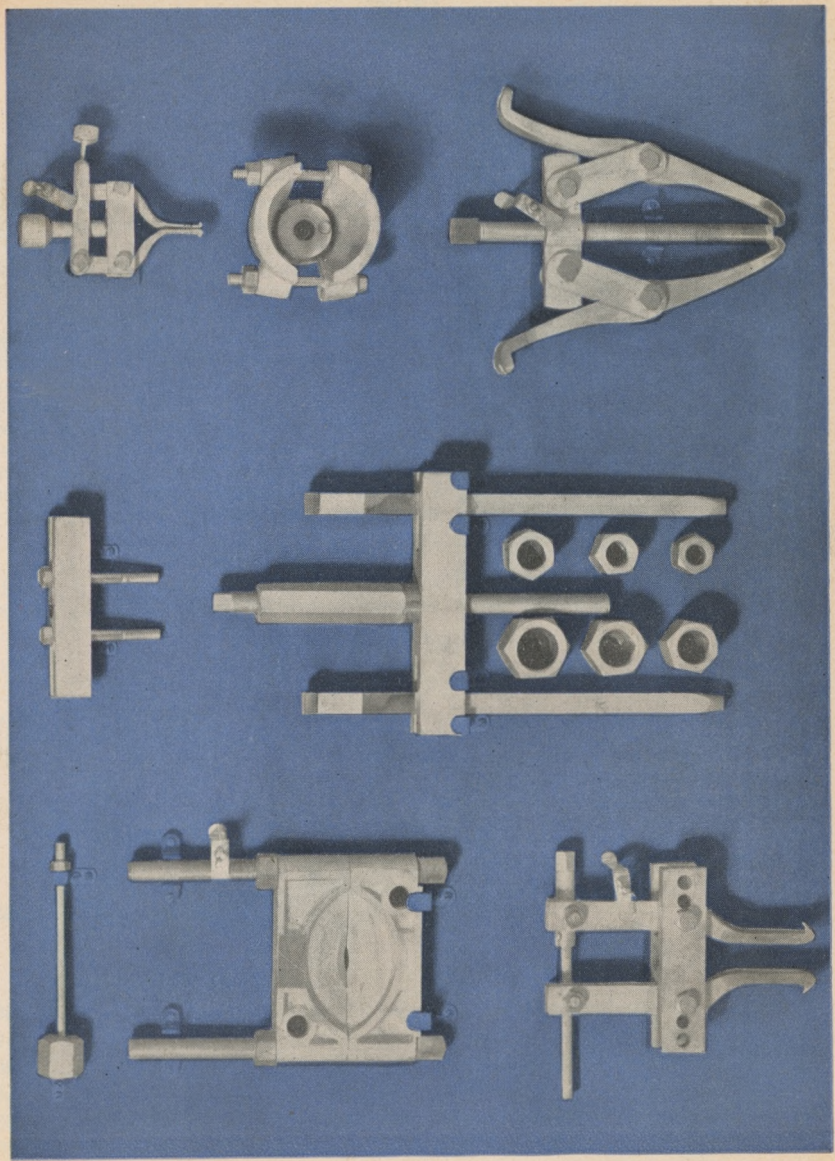
Display boards are built of substantial  $\frac{3}{8}$ " ply board, complete with hold-down clamps, position holders, thumb nuts, etc.

The puller combination on the display board illustrated on the opposite page includes the following tools:

1—No. 910—Multipurpose Puller with Adaptors $\frac{5}{8}$ " to $1\frac{1}{4}$ " .....	\$11.30
1—No. 943—Timkin Cup Puller Attachment .....	9.75
1—No. 944—Pinion Shaft Puller Attachment .....	5.00
1—No. 945—Timing Gear Puller Attachment .....	2.50
1—No. 946—Valve Guide Puller Attachment .....	1.25
1—No. 955—Pilot Bearing Puller Attachment .....	4.75
1—No. 1002—Gripomatic Puller .....	11.00
1—No. 951—Pulling Attachment .....	9.25
No. PG-14—Puller Set Complete with display board .....	58.30

• The display board measures 2' x 3' and can be furnished at a net cost of \$3.50.





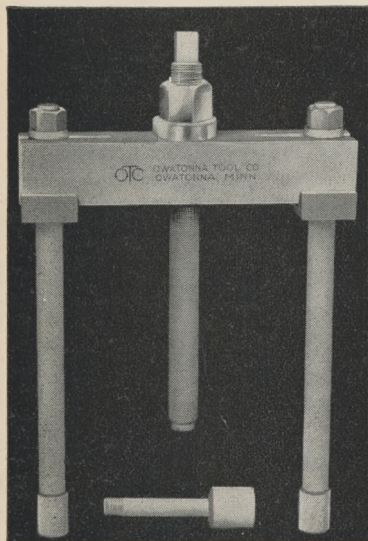
SERVICE SHOP PULLER DISPLAY BOARD



## Otc Push-Pullers

Patent Pending

Approved by the Timken Roller Bearing Co.



This new oTc contribution to the tool industry is without doubt the most versatile and universal tool of its kind ever built. It will actually do hundreds of difficult removal and replacing jobs, that in many cases could not even be done with a hydraulic press.

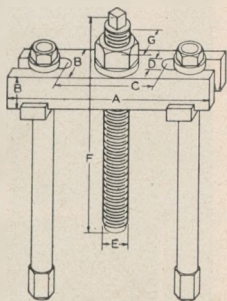
Developing up to 40 tons pulling or pushing power it is actually a portable press having many times the versatility of the ordinary power press. This tool has been approved by Tractor manufacturers and bearing manufacturers alike. With its attachments and adaptors it removes and replaces bearings, gears, pinions, pulleys, wheels, bushings, etc., and does these jobs without damaging costly parts.

No maintenance shop is complete without this tool and its attachments as listed and illustrated on the following pages.

No.	"A"	"B"	"C"	"D"	"E"	"F"	"G"
930	10 1/2"	2"	4 3/4"	3/4"	1"-14	13"	1 1/2"
938	13 1/2"	2"	4 3/4"	3/4"	1"-14	13"	1 1/2"
939	18"	2 1/2"	8 1/2"	1"	1 1/2"-12	16 1/2"	2 1/8"

### AVAILABLE LEG LENGTHS

Leg No.	Length	For Puller No.	Price Per Pr.
930-B	16 1/2"	930-938	\$2.75
930-C	22 1/4"	930-938	3.50
930-D	9 1/2"	930-938	2.50
930-E	4 1/2"	930-938	2.50
939-A	8 "	939	4.50
939-B	18 "	939	6.00
939-C	28 "	939	7.25



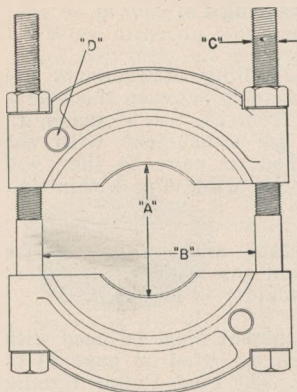
Hexagon Caps for leg-ends per pair for 930 & 938 .....	\$ 1.00
Hexagon Caps for leg-ends per pair for 939 .....	1.50
No. 930-A—Adaptor, 5/8" male x 1" female .....	1.00
No. 939-D—Adaptor, 1" male x 1 1/2" female .....	2.50
No. 930—Push-Puller complete with 9 1/2" legs and 930-A Adaptor ..	14.85
No. 938—Push-Puller complete with 9 1/2" legs and 930-A Adaptor ..	16.85
No. 939—Push-Puller complete with 8" legs and 939-D Adaptor .....	37.50



## Pulling Attachments

Patent Pending

Approved by the Timken Roller Bearing Company

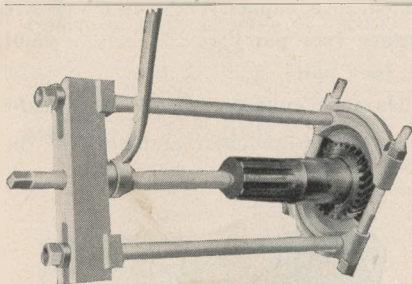


For all kinds of maintenance work five sizes of Pulling attachments are available. These tools can be applied behind gears, bearings, pinions, pulleys, wheels, etc., where it is impossible to obtain a grip by any other means.

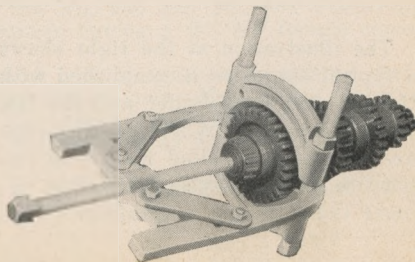
The knife-like edges of the tool can be forced down behind the part to be pulled. In the case of bearings the tool pulls against the inner race without danger of distorting or damaging the bearing.

Many operations are possible with these tools used in connection with an oTc Push-Puller. Parts can be removed and replaced with ease and in a minimum of time.

No.	Price	"A"		"B"	"C"	"D"	Used With Puller No.
		Max.	Min.				
950	\$ 3.50	2 1/4 "	0 "	2 1/4 "	7/16 "	3/8 "-16	1001 or 515
951	9.25	4 1/4 "	0 "	4 1/4 "	5/8 "	5/8 "-18	913-930-938
952	12.25	5 3/4 "	1 "	5 3/4 "	3/4 "	5/8 "-18	930 or 938
952-A	13.25	9 "	1 "	5 3/4 "	3/4 "	5/8 "-18	930 or 938
953	31.50	9 "	1 "	10 "	1 1/8 "	1 "-14	939



The photograph at the left illustrates a typical application showing the No. 930 Push-Puller in use with the No. 952 Pulling Attachment, removing a gear. The hook-up for replacing the gear is similar.



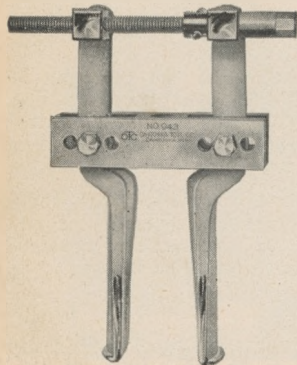
The illustration at the right shows the use of the No. 952 Pulling Attachment with the No. 1003 Gripomatic Puller. Larger size pullers on pages 40 to 43 can be used on similar jobs with the No. 953 Pulling Attachment.



## Bearing Cup Pulling Attachments

Patents Applied For

Approved by the Timkin Roller Bearing Co.



Otc Bearing Cup pulling attachments are universal. These two tools between them have a range of capacity from  $1\frac{1}{2}$ " to 9" inside diameter. Used as an attachment with the Push Pullers described on page 54 they will pull a majority of the bearing cups within that range.

Each tool is adjustable and the jaws can be forced and held behind any bearing cup where even the smallest shoulder is provided.

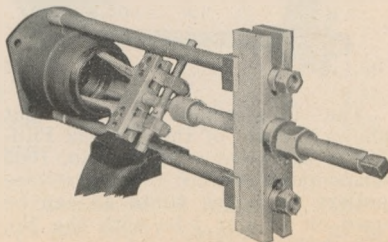
The No. 943 Attachment must be used with an adaptor No. 930-A as listed on page 54 to adapt it to the No. 930 Push-Puller forcing screw. The No. 947 Attachment must be used with the No. 939-D Adaptor to adapt it to the No. 939 Push Puller forcing screw.

These two attachments used with the Push Pullers are indispensable in any maintenance shop. They will reduce the working time on these jobs and eliminate costly breakage of parts.

No. 943—Cup Pulling Attachment, 4" clearance, capacity $1\frac{1}{2}$ " to 6" ..	\$ 9.75
No. 943-A—Extra Long Jaws 5" clearance (per pair) .....	5.00
No. 943-C—Short Jaws $2\frac{1}{4}$ " clearance (per pair) .....	2.50
No. 947—Cup Pulling Attachment, 6" clearance, capacity 3" to 9" .....	23.80

Note:—Clearance designates distance between shoulder and hook of the jaw.

The illustration at the right shows a typical operation accomplished with the No. 930 Push-Puller and the No. 943 Attachment. Where bearing cups are located in a blind hole it is impossible by any other method to remove them quickly and safely.

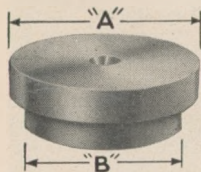


## Step Plate Adaptors

These step plates are for use either with OTC Gripomatic Pullers or the Push-Pullers. Wherever it is necessary to pull a bearing or gear from a hollow shaft or housing, the plate is placed against the end of the housing to provide a base against which the forcing screw may bear.

When ordering step plates determine first the inside diameter of the housing, then pick out the step plate with the corresponding "B" diameter.

The sizes listed are carried in stock. Prices on special sizes furnished on request.

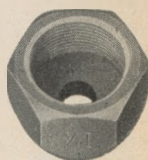


No.	"A" Dia.	"B" Dia.	Price	No.	"A" Dia.	"B" Dia.	Price
630-1	1 "	3/4 "	\$.20	630-10	2 3/8 "	1 7/8 "	\$.50
630-2	1 1/8 "	7/8 "	.20	630-11	2 1/2 "	2 "	.50
630-3	1 1/4 "	1 "	.25	630-12	2 5/8 "	2 1/8 "	.60
630-4	1 3/8 "	1 1/8 "	.25	630-13	2 3/4 "	2 1/4 "	.70
630-5	1 5/8 "	1 1/4 "	.25	630-14	2 7/8 "	2 3/8 "	.80
630-6	1 3/4 "	1 3/8 "	.30	630-15	3 "	2 1/2 "	.95
630-7	1 7/8 "	1 1/2 "	.30	630-16	3 1/4 "	2 3/4 "	1.10
630-8	2 "	1 5/8 "	.35	630-17	3 1/2 "	3 "	1.25
630-9	2 1/8 "	1 3/4 "	.40				

## Threaded Adaptors

Threaded Adaptors are available to increase the range and effectiveness of the Push-Pullers. With these adaptors it is possible to pull all types of shafts, with threaded ends. They are necessary also when it is desired to obtain a pushing action to replace gears and bearings on shafts with threaded ends.

These adaptors have a 1" female connection. Adaptors shown on page 49 have 5/8" female connection.



No.	Size	Price	No.	Size	Price
932-B	1 " SAE	\$1.00	941-A	1 1/4 " USS	\$1.20
936-A	1 1/8 " SAE	1.10	948-A	1 1/2 " SAE	1.50
940-A	1 1/4 " SAE	1.20	949-A	1 1/2 " USS	1.50

## Male Adaptor Plugs

These male plug adaptors all have a 1" female connection and fit directly on the end of the No. 930 and No. 938 Push-Puller screw. For Male Plug Adaptors having a 5/8" NF female connection see page 50.

They are particularly useful with these tools in pulling shafts, pinions and other parts having tapped ends. Many other operations will suggest themselves to the users of these pullers. A complete range of sizes is available in both USS as well as SAE and Pipe threads.



No.	Male End	Length	Price	No.	Male End	Length	Price
20-P	5/8 " USS	2 1/2 "	\$ .75	28-P	7/8 " SAE	2 3/4 "	\$ .85
24-P	3/4 " SAE	2 1/2 "	.75	29-P	7/8 " USS	2 3/4 "	.85
25-P	3/4 " USS	2 1/2 "	.75	36-P	1 1/8 " SAE	2 3/4 "	.95

## McCormick-Deering Service Tools



On the opposite page is illustrated the Service Set which OTC has prepared for McCormick-Deering dealers. This set is complete and will handle practically all of the gear and bearing service work in all McCormick-Deering models.

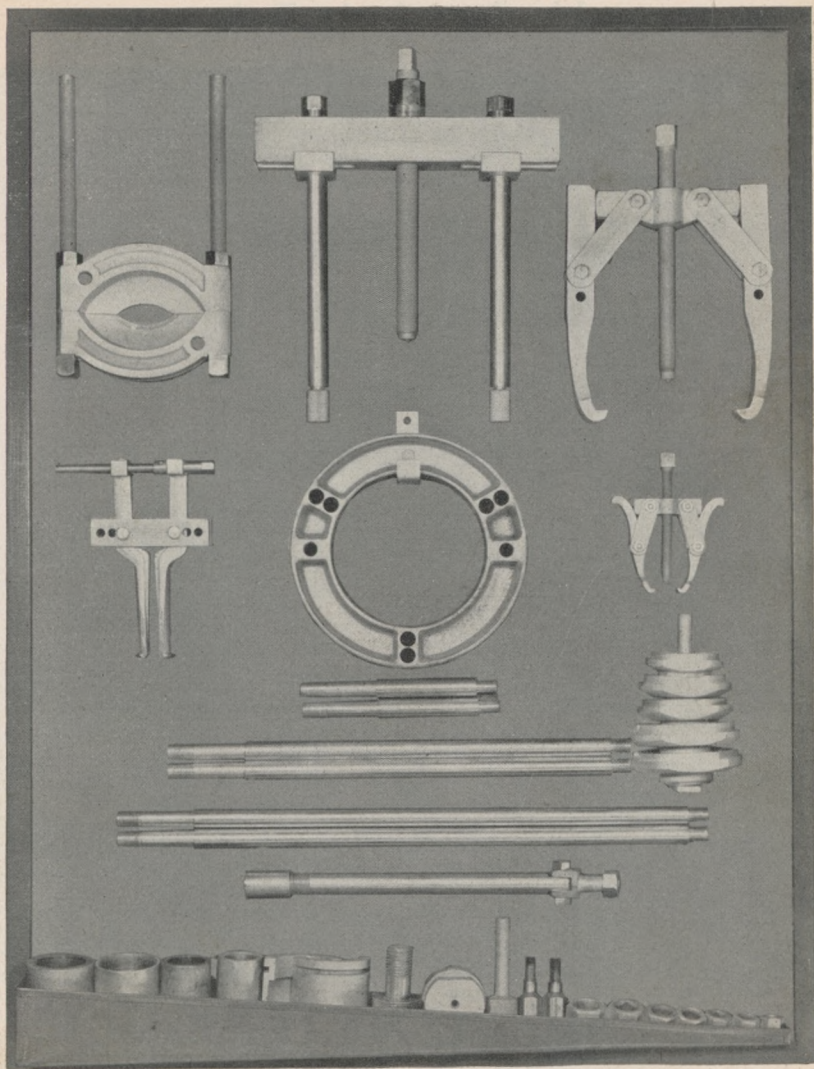
With this set it is possible to handle a majority of service work on all makes and models of trucks and tractors that may be accepted as trade-ins. The tools are portable and can be operated in the field as well as in the shop. They will not become obsolete with yearly model changes.

A Service Bulletin describing this set and illustrating many difficult operations is available free of charge. Ask for it.

Adaptor plates 970-8M and 970-4H may be added to remove dry sleeves on Models M & H at an additional cost of \$2.65 to the set price below.

Tool No.	Description	Price
No. 938—Heavy Duty Push-Puller with 9½" legs		\$ 15.85
No. 952-A—Pulling Attachment		13.25
No. 1003—Heavy Duty Gripomatic Puller		16.50
No. 1001—Gripomatic Puller		5.50
No. 943—Bearing Cup Pulling Attachment		9.75
No. 938-A—Flywheel Pulling Attachment		4.50
No. 930-E—4½" Legs for Heavy Duty Push-Puller (per pair)		2.50
No. 930-B—16½" Legs for Heavy Duty Push-Puller (per pair)		2.75
No. 930-C—22¼" Legs for Heavy Duty Push-Puller (per pair)		3.50
No. 970-1—Cylinder Sleeve Adaptor Plate 3"		.90
No. 970-7—Cylinder Sleeve Adaptor Plate 3¾"		1.45
No. 970-11—Cylinder Sleeve Adaptor Plate 4¼"		1.75
No. 970-13—Cylinder Sleeve Adaptor Plate 4½"		1.90
No. 970-15—Cylinder Sleeve Adaptor Plate 4¾"		2.10
No. 938-J—Swivel Sleeve Puller Attachment		3.15
No. 930-A—¾" male x 1" female Adaptor		1.00
No. 938-B—Crankshaft Rear End Adaptor 1" female x 2⅝" female		2.20
No. 938-C—Crankshaft Rear End Adaptor 1" female x 2¼" female		2.50
No. 938-D—Crankshaft Front End Adaptor 1" female x 1¾" female		2.00
No. 938-E—Crankshaft Front End Adaptor 1" female x 1½" female		1.90
No. 938-F—Cam Shaft Adaptor 1" female x 1" female		.50
No. 938-G—Gear Housing Adaptor Plugs ⅝" female x ½" male		1.00
No. 938-H—Gear Housing Adaptor Plugs ⅝" female x ⅜" male		1.00
No. 938-I—Flywheel Adaptor 2¼" male x 1⅝" male, used with 938-C		1.40
No. 938-K—Spline Shaft Bearing Race Collet		1.75
No. 938-L—Flywheel Adaptor Plate 2⅞" OD		.70
No. 938-M—Flywheel Adaptor Plate 2⅝" OD		.60
No. 938-N—Flywheel Key Plate		.25
No. MD-7—Set 7 Threaded Adaptors ⅝", ¾" (2), ⅞", 1", 1⅛", 1¼"		3.75
No. MD—Service Board (only)		5.00
No. MD-35—McCormick-Deering Service Set complete as listed		110.90





## McCORMICK-DEERING SERVICE SET



## John Deere Service Tools



Factory approved and recommended, the set shown on the opposite page solves the major service problems of the John Deere dealer. Because it works equally well on other makes and models of tractors it is the most economical set of its kind available.

Since it can be used on power implements of all kinds and will not become obsolete with yearly model changes this set will pay for itself in a short time. Dealers who equip their shop with the OTC PULLING SYSTEM show a bigger profit on service and will be able to give service that results in the sale of new units.

A Service Bulletin describing this set and showing many difficult jobs is available free of charge.

For proper service, it is essential that each dealer have a complete set. Where sets are purchased it is recommended that the dealer obtain the service board also. This board provides a convenient and attractive place to keep the tools, and reduces the chances for loss of any part of the set. The entire set can be located conveniently on a wall, since a space only 3 feet by 3 feet is required.

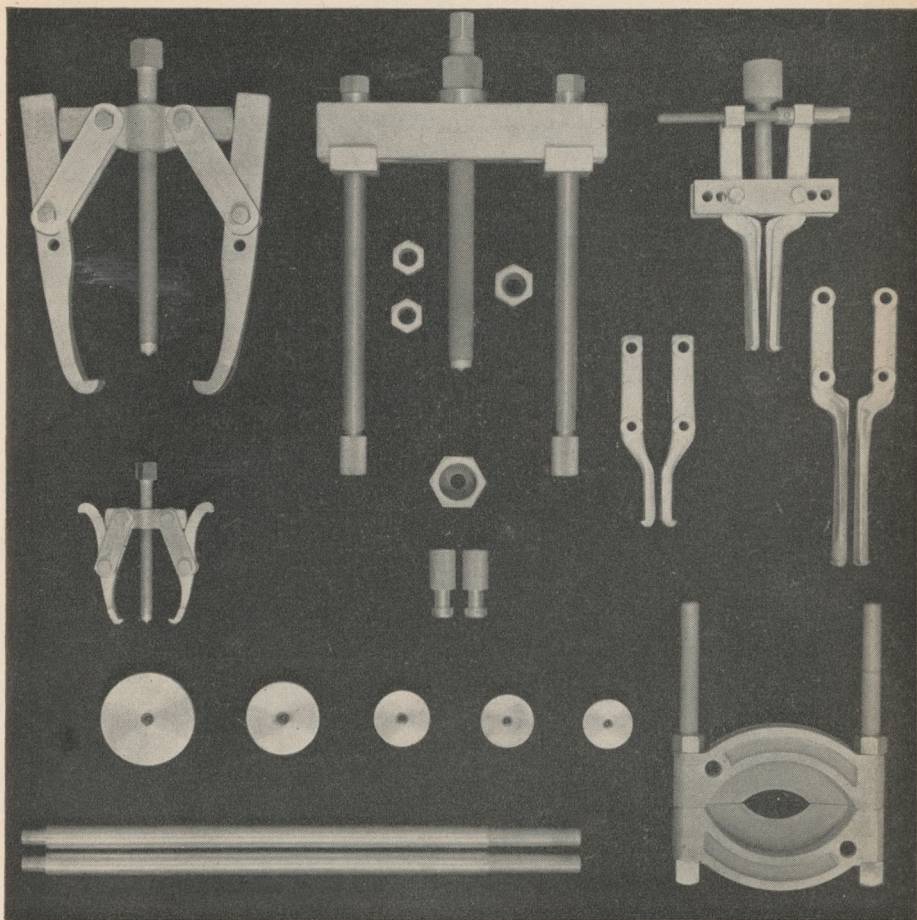
Tool No.	Description	Price
No. 1001—Gripomatic Puller		\$ 5.50
No. 1003—Gripomatic Puller		16.50
No. 930—Heavy Duty Push-Puller		13.85
No. 930-B—16½" Legs for No. 930 Push-Puller		2.75
No. 952—Pulling Attachment		12.25
No. 932-A—Adaptor, ¾" female x 1" female		.55
No. 948-A—Adaptor, 1" female x 1½" female		.80
No. 943—Bearing Cup Pulling Attachment		10.75
No. 943-A—Long Jaws for No. 943 Bearing Cup Puller		5.00
No. 943-C—Short Jaws for No. 943 Bearing Cup Puller		2.50
No. 924—Adaptors, ⅝" female x ¾" female, per pair		.90
No. 930-J—Turned Leg-Ends to pull Clutch Drive Disc		1.00
No. 630-4—Step Plate for pulling Differential Carrier Bearing on Model "L"		.25
No. 630-7—Step Plate for pulling Model "H" Pulley Gear		.30
No. 630-9—Step Plate for pulling Model "B" Pulley Gear		.40
No. 630-13—Step Plate for pulling Model "A" Pulley Gear		.70
No. 630-17—Step Plate for pulling "D" and "G" Pulley Gear		1.25
No. JD—Service Board (only)		3.50
No. JD-15—Essential Tool Set, as illustrated		78.75



OWATONNA



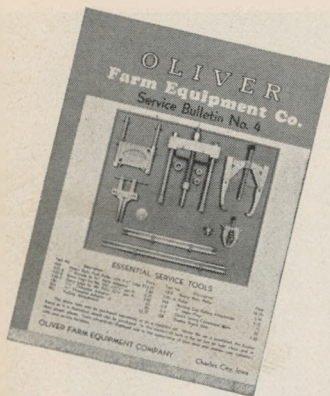
MINNESOTA



ESSENTIAL TOOLS FOR JOHN DEERE SERVICE



## Oliver Service Tools

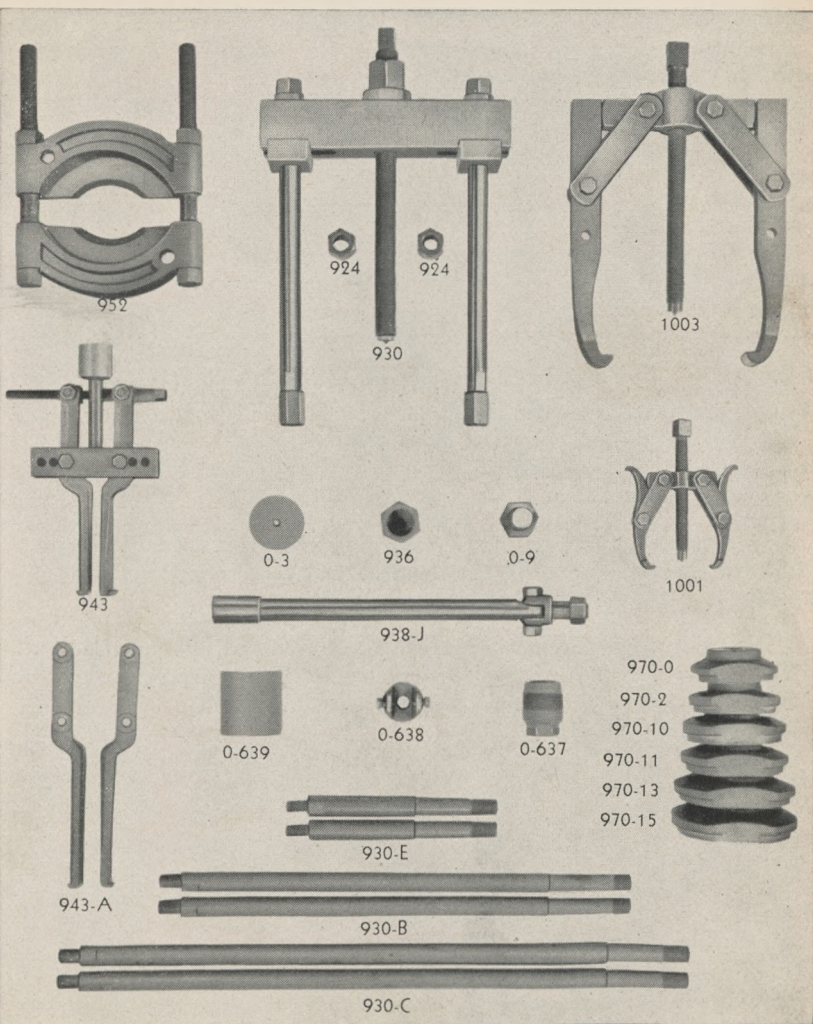


A revised set of tools has been developed for service on Oliver tractors in conjunction with the Oliver Farm Equipment Co. Service department. Several special Adaptors for use on the new Model "60" tractor have been included. Dealers already having an Oliver set need purchase only these special adaptors to handle service on this new tractor.

Dealers handling Oliver power implements and tractors will find that this set will provide a source of profit from their service shop that was not possible before. Good service is an essential function of a dealership that will build good-will and stimulate the sale of new units.

Ask for the special Oliver service bulletin which describes this set and illustrates many difficult jobs.

Tool No.	Description	Price
No. 930—Push-Puller with 9½" legs		\$13.85
No. 930-B—16½" legs for Push-Puller		2.75
No. 930-C—22¼" legs for Push-Puller		3.50
No. 930-E—4½" legs for Push-Puller		2.50
No. 938-J—Swivel Sleeve Puller Attachment		3.15
No. 952—Pulling Attachment		12.25
No. 943—Bearing Cup Pulling Attachment		10.75
No. 943-A—Long Jaws for No. 943 Attachment		5.00
No. 1003—Grip-o-matic Puller		16.50
No. 1001-A—Grip-o-matic Puller		5.50
No. 924—Threaded Adaptors (per pair)		.90
No. 936—Threaded Adaptor 1½"		.65
No. 630-1—Step Plate		.20
No. 970-0—Sleeve Puller Adaptor Plate (Model "60")		1.15
No. 970-2—Sleeve Puller Adaptor Plate		1.00
No. 970-10—Sleeve Puller Adaptor Plate		1.70
No. 970-11—Sleeve Puller Adaptor Plate		1.75
No. 970-13—Sleeve Puller Adaptor Plate		1.90
No. 970-15—Sleeve Puller Adaptor Plate		2.10
No. O-636—Centering Nipple		.50
No. O-637—Bull Pinion Bearing Adaptor (Model "60")		2.00
No. O-638—Pump Impeller Pulling Adaptor (Model "60")		3.00
No. O-639—Sliding Gear Spacer (Model "60")		1.00
No. O-9—1" Male Plug		.75
No. O-3—Clutch Spring Compressor Plate		.65
No. OR-2—Display Board (only)		4.50
No. OR-15—Oliver Service Set complete with service board		99.50



ESSENTIAL TOOLS FOR OLIVER SERVICE

## Minneapolis-Moline Service Tools

Implement dealers handling the Minneapolis-Moline line of tractors and power implements will be interested in the service set prepared by oTc especially for the Minneapolis-Moline Power Equipment Company.

It has been generally established that a good service department is necessary to the profitable sale of new units. Service builds goodwill, helps to make contacts with new prospects and at the same time makes a profit.

This set is the most economical from the dealers standpoint because it handles the majority of removing and replacing operations on Minneapolis-Moline power implements. It is portable and can be taken into the field on emergency jobs whenever the occasion demands.

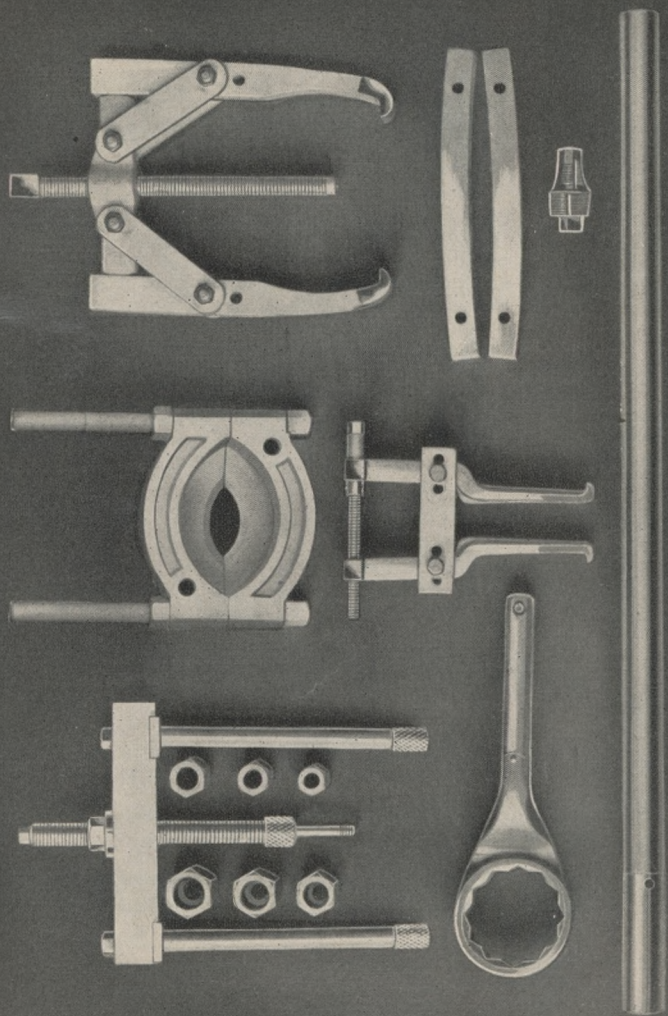
Among its other advantages is its universal application to all makes of tractors and farm implements. It can be used equally well on other makes of tractors which might be taken in on trade and reconditioned. There is no other set on the market which compares either in quality or in the wide range of work possible.

As a part of the oTc Pulling System these tools will not become obsolete with yearly model changes. They will be just as necessary and will operate just as efficiently ten years from now as they do today.

The set shown on the opposite page is approved and recommended by the Minneapolis-Moline Co. A Service Bulletin describing this set and showing service applications is available free of charge.

Tool No.	Description	Price
930—Push Puller with 6 adaptors $\frac{5}{8}$ " to $1\frac{1}{4}$ " SAE .....		\$18.15
952—Pulling Attachment .....		12.25
1003—Gripomatic Puller .....		16.50
MO-98—Double Offset Box Wrench .....		13.50
M-36—Seamless Steel Extension Handle .....		4.25
943—Bearing Cup Pulling Attachment .....		9.75
RE-9507—Flywheel Pulling Bars (per pair) .....		2.75
RE-9508—Bushing Pulling Attachment .....		2.00
MM—Service Board (only) .....		3.50
MM-15—Minneapolis-Moline Service Set Complete .....		82.65
MM-14—Service Set (less MO-98 and M-36) .....		64.90





MINNEAPOLIS-MOLINE SERVICE SET



## Allis-Chalmers Service Tools

A complete set of pulling tools developed especially for the efficient servicing of Allis-Chalmers farm tractors. With the addition of only a few special items, regular stock tools comprise this set. Any dealer already having some of these tools need add only the balance of those listed to have a complete A-C service set.

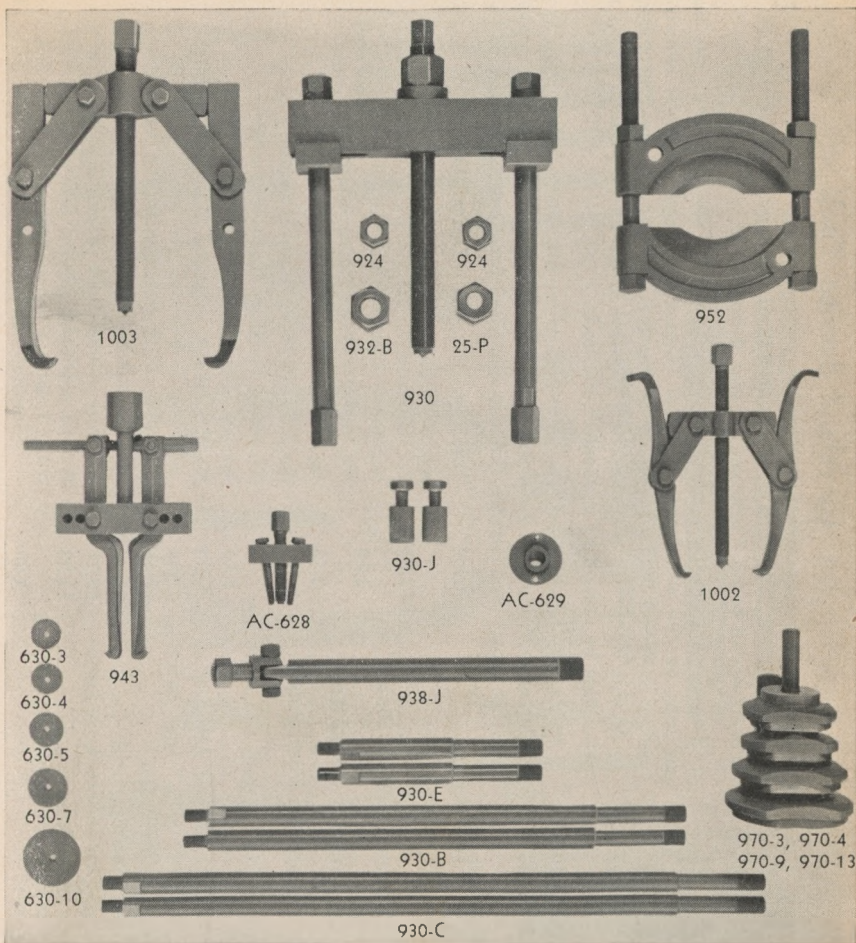
The set as listed and illustrated is universal and will work equally well on all makes and models of tractors. Special attachments and adaptors may be added to increase the scope of this set to handle special work on other makes of tractors which may be taken in on trade. These tools will not become obsolete and it will not become necessary to buy a new set each time a change in model is

made. For this reason the oTc Pulling System is economical. Over a period of years it will pay for itself many times over.

The tools listed below are illustrated in the photograph on the opposite page. It is recommended that sets be purchased mounted on the display board built for that purpose. Ask for Service Bulletin No. AC-20.

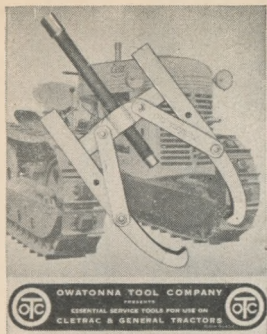
Tool No.	Description	Price
No. 930—Push-Puller with 9½" legs	.....	\$13.85
No. 930-B—16½" legs for Push-Puller	.....	2.75
No. 930-C—22¼" legs for Push-Puller	.....	3.50
No. 930-E—4½" legs for Push-Puller	.....	2.50
No. 930-A—Reducing Adaptor 1" female x ⅝" male	.....	1.00
No. 943—Bearing Cup Pulling Attachment	.....	9.75
No. 952—Bearing Pulling Attachment	.....	12.25
No. 1003—Grip-o-matic Puller	.....	16.50
No. 1002—Grip-o-matic Puller	.....	11.00
No. 630-3—Step Plate Adaptor	.....	.25
No. 630-4—Step Plate Adaptor	.....	.25
No. 630-5—Step Plate Adaptor	.....	.25
No. 630-7—Step Plate Adaptor	.....	.30
No. 630-10—Step Plate Adaptor	.....	.50
No. 932-B—Threaded Adaptor 1" x 1"	.....	1.00
No. 924—Threaded Adaptor ⅝" x ¾" (per pair)	.....	.90
No. 25-P—Adaptor Plug	.....	.75
No. 938-J—Sleeve Puller Swivel Extension	.....	3.15
No. 970-3—Sleeve Puller Adaptor Plate	.....	1.10
No. 970-4—Sleeve Puller Adaptor Plate	.....	1.15
No. 970-9—Sleeve Puller Adaptor Plate	.....	1.60
No. 970-13—Sleeve Puller Adaptor Plate	.....	1.90
No. 930-J—Brake Drum Leg-ends (per pair)	.....	1.00
No. AC-628—Pump Flange Puller	.....	1.50
No. AC-629—Impeller Puller Collar	.....	1.00
No. AC—Display Board (only) 3' x 4'	.....	4.50
No. AC-610—Essential Tool Set Complete on service board	.....	94.20





# APPROVED ALLIS-CHALMERS SERVICE SET





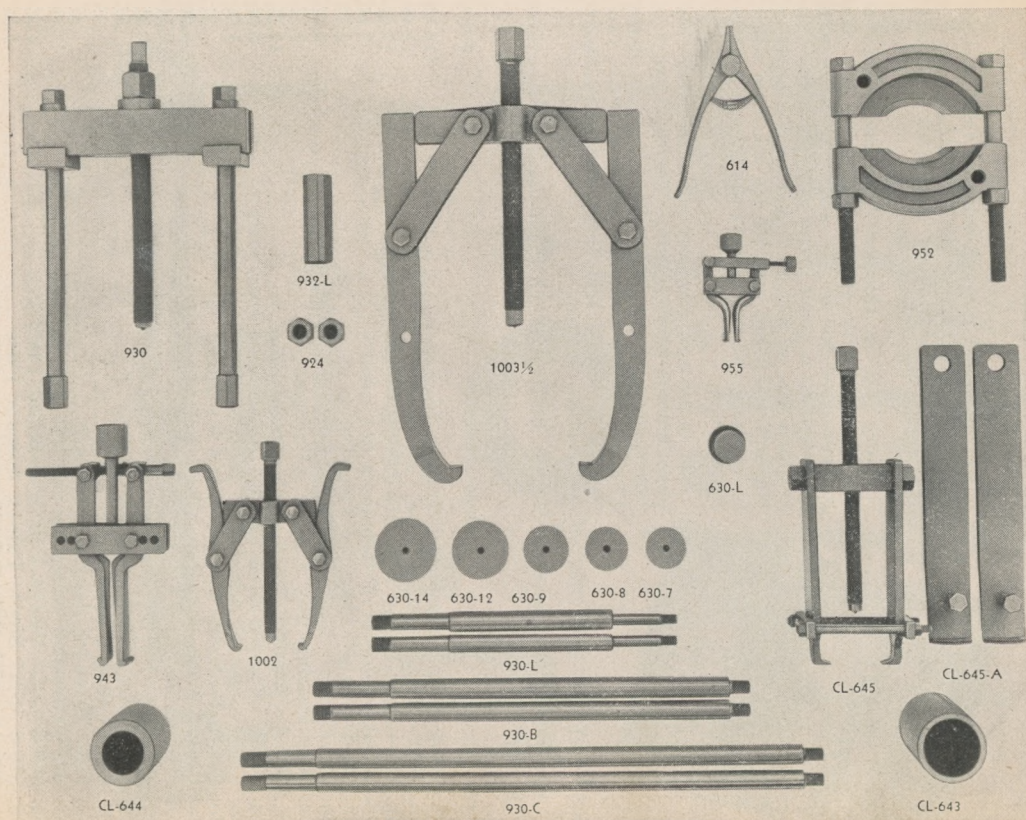
## Cleveland Service Tools

The Service Set illustrated on the opposite page has been approved for service on CLETRAC and the GENERAL line of tractors and is being recommended to all Cleveland tractor dealers and users.

The oTc Pulling System is readily adapted for use on track-type tractors as well as the wheel-type tractor. Gears, bearings, pulleys, wheels, etc., can be removed and replaced in a fraction of the time previously required to do this work. In addition, it is possible to save costly parts which might otherwise be ruined by makeshift methods.

The tools listed below are mounted on an attractive board that provides a convenient place to keep the tools and which will add to the appearance of your shop. See Service Bulletin No. CL-6 for complete details of this set.

Tool No.	Description	Price	Tool No.	Description	Price
No. 930—Heavy Duty Push-Puller (less legs)		\$11.35	No. CL-644—Adaptor for replacing HG Oil Seal		\$ 2.50
No. 930-D—9½" Legs for Push-Puller (per pair)		2.50	No. 630-7—Step Plate Adaptor		.30
No. 930-B—16½" Legs for Push-Puller (per pair)		2.75	No. 630-8—Step Plate Adaptor		.35
No. 930-C—22¼" Legs for Push-Puller (per pair)		3.50	No. 630-9—Step Plate Adaptor		.40
No. 930-L—Special 9½" Legs for Push-Puller (per pair)		3.50	No. 630-12—Step Plate Adaptor		.60
No. 932-L—1" x 1-20 Thread Adaptor		.90	No. 630-14—Step Plate Adaptor		.80
No. 924—Adaptors ⅝" x ¾" (per pair)		.90	No. CL-645—Special Bearing Puller		16.50
No. 1002—Grip-o-matic Puller		11.00	No. CL-645-A—Special Jaws for Puller		7.50
No. 1003½—Grip-o-matic Puller		25.75	No. CL-645		.75
No. 943—Bearing Cup Puller Attachment		10.75	No. 955—Pilot Bearing Puller Attachment		4.25
No. 952—Pulling Attachment		12.25	No. 630-L—Special Step Plate Adaptor		.75
No. CL-643—Adaptor for replacing EH, A and B Oil Seal		3.00	No. 614—Snap Ring Pliers		1.50
			No. CL—Display Board (only)		5.00
			No. CL-660—Cletrac Essential Tool Set complete on service board		128.60



NO. CL-660 CLETRAC SERVICE SET



## Case Service Tools



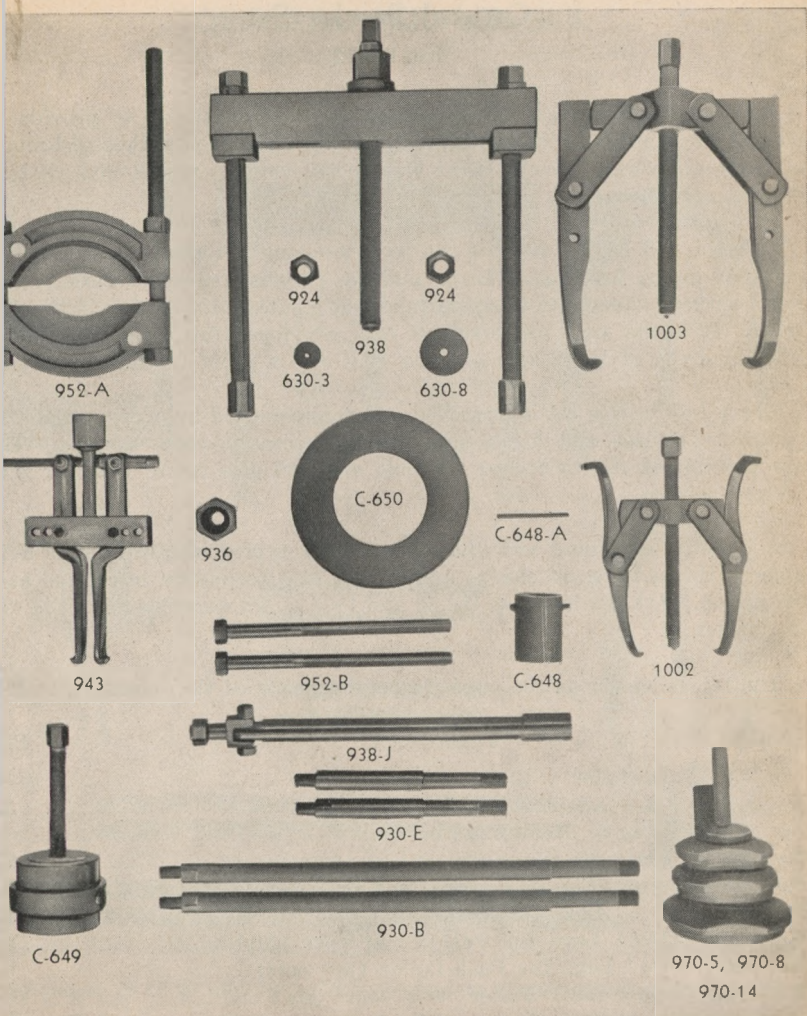
Approved and recommended by the J. I. Case Co., the set of service tools illustrated on the opposite page has been developed especially for use on Case tractors.

Every tool in this set has been tested at the Case factory and found to do the jobs recommended for it. In addition, these same tools will do a great many difficult service operations on all other makes and models of tractors making it possible for the Case dealer to overhaul and recondition used tractors taken in on trade.

Otc is the only company manufacturing complete tractor service sets. Through years of experience, universal tools have been developed which will not become obsolete with each change of model and these tools can be depended upon to give years of satisfactory service.

Ask for the Special Case Service Bulletin which illustrates and describes this complete set.

Tool No.	Description	Price
No. 1003—Grip-o-matic Puller, Cap. 15 tons		\$16.50
No. 1002—Grip-o-matic Puller, Cap. 9 tons		11.00
No. 938—Push-Puller with 930-D, 9½" legs		15.85
No. 930-A—Adaptor 1" female x ⅝" male		1.00
No. 930-B—16½" Legs for Push-Puller		2.75
No. 930-E—4½" Legs for Push-Puller		2.50
No. 943—Bearing Cup Pulling Attachment		9.75
No. 952-A—Bearing Pulling Attachment		13.25
No. 952-B—Forcing Bolts for 952 Attachment (per pair)		3.00
No. C-648—Special Adaptor 1" female x 1⅜" opening		1.50
No. C-648-A—Extra Pin for C-648 for Model "S"		.25
No. C-649—First Reduction Shaft Bearing Puller		9.00
No. C-650—Governor Gear Pulling Plate		2.50
No. 938-J—Swivel Sleeve Pulling Attachment		3.15
No. 630-3—Step Plate Adaptor		.25
No. 630-8—Step Plate Adaptor		.35
No. 936—Threaded Adaptor 1⅛" NF		.65
No. 924—Threaded Adaptors ¾" NF (per pair)		.90
No. 970-5—3½" Sleeve Pulling Adaptor Plate		1.25
No. 970-8—3⅞" Sleeve Pulling Adaptor Plate		1.50
No. 970-14—4⅞" Sleeve Pulling Adaptor Plate		2.00
No. CA—Display Board (only)		4.50
No. C-635—Case Essential Tool Set on service board		103.40



## CASE ESSENTIAL SERVICE TOOLS



**General Service Set**

No. PE-12

The set illustrated on the opposite page was developed to provide the widest range of utility on the largest possible number of makes and models of tractors, power shovels, Road Machinery, motors, trucks and all kinds of power equipment.

This set will handle 90% of the jobs involving the removal and replacement of gears, bearings, wheels, pulleys, pinions and other closely fitted parts without damage to those parts and at a substantial saving in time and labor. It is the most universal set ever developed for this kind of work. The hundreds of these sets in every day use is proof of their popularity.

Every tool in this set is approved and recommended by every major tractor manufacturer and by leading bearing manufacturers as well. They are guaranteed not to become obsolete and will give many years of satisfactory service.

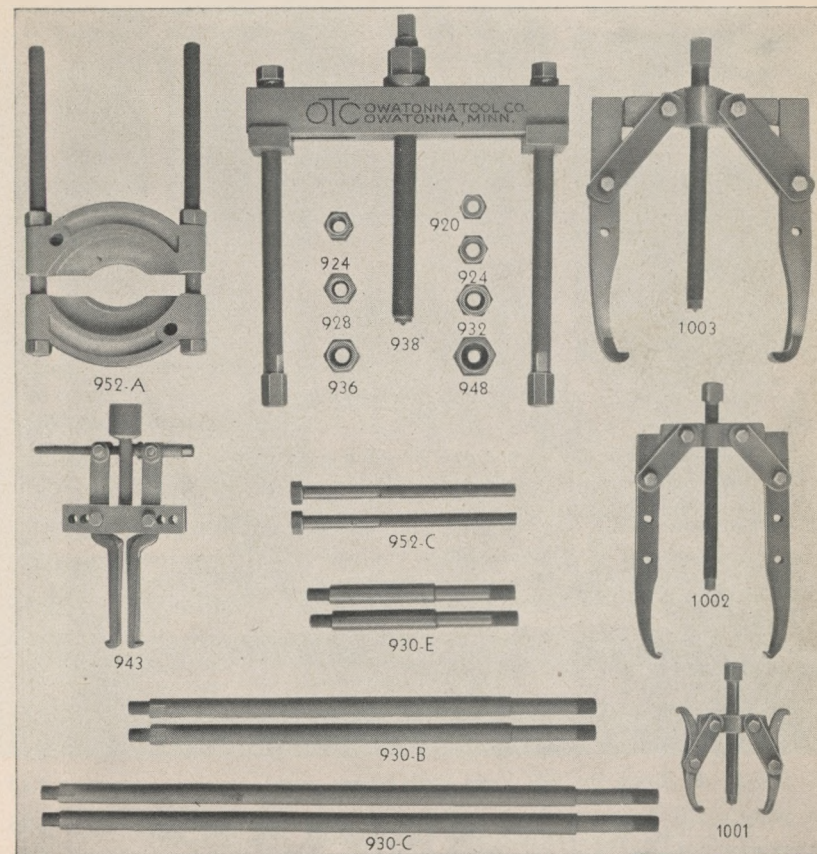
A bulletin describing and illustrating many typical applications is available on this set free of charge and will be sent to anyone interested at no obligation. Ask for bulletins GP-40 and P-28 which describe all of the tools in this set.

The set as shown on the opposite page consists of the following tools:

Tool No.	Description	Price
No. 938—Push-Puller with $9\frac{1}{2}$ " legs		\$15.85
No. 920 to 948—Adaptors $\frac{5}{8}$ " to $1\frac{1}{2}$ "		3.90
No. 952-A—Bearing Pulling Attachment		13.25
No. 952-C—Extra Bolts for 952 Pulling Attachment		3.50
No. 943—Bearing Cup Pulling Attachment		10.75
No. 930-B— $16\frac{1}{2}$ " Legs for Push-Puller (per pair)		2.75
No. 930-C— $22\frac{1}{4}$ " Legs for Push-Puller (per pair)		3.50
No. 930-E— $4\frac{1}{2}$ " Legs for Push-Puller (per pair)		2.50
No. 1003—Grip-o-matic Puller with short jaws		16.50
No. 1002—Grip-o-matic Puller with long jaws		12.50
No. 1001—Grip-o-matic Puller with short jaws		5.50
No. PE-11—Display Board (only) 3' x 4'		4.50
No. PE-12—General Service Set complete on service board		95.00

**GENERAL SERVICE SET**

No. PE-12

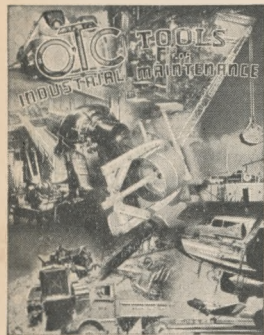


See pages 40 to 45 and 54 to 56 for complete specifications on larger sizes in Push-Pullers and attachments, and larger sizes in Gripomatic Pullers. Service Boards can be furnished for any combination of tools required. Prices on service boards will be given on request.



**Industrial Maintenance Set**

No. PE-20



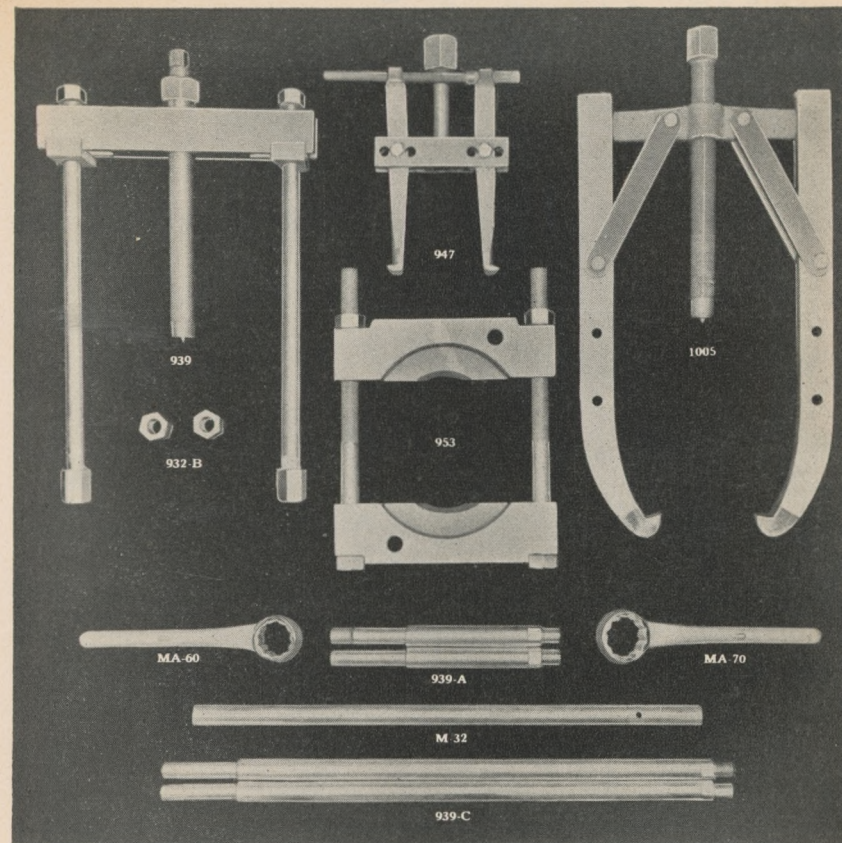
Built for maintenance operations on heavy machinery, this set is the most versatile and complete set of its kind on the market.

The removal and replacement of large bearings, gears, wheels, pulleys, bushings etc., is made comparatively simple where many costly hours were consumed before. Damage to expensive parts and accidents to operators can be reduced through the use of these positive-gripping, non-slipping tools.

The tools comprising the oTc Pulling System have been approved by M-R-C and the Timken Roller Bearing Co. and the thousands of them in every day use are proof of the esteem in which they are held by maintenance men everywhere.

The tools comprising this set can be obtained mounted on a substantial board which provides a convenient place to keep them. For further details see Bulletin No. PE-1520.

No.	Description	Price
No. 939—Heavy Duty Push Puller with 18" legs		\$36.00
No. 947—Bearing Cup Pulling Attachment with adaptor		26.30
No. 953—Bearing Pulling Attachment		31.50
No. 1005—Grip-o-matic Puller, 35 ton capacity		47.50
No. 932-B—Threaded Adaptors (per pair)		2.00
No. 939-A—8" Legs for 939 Push-Puller (per pair)		4.50
No. 939-C—28" Legs for Push-Puller (per pair)		7.25
No. MA-70—Heavy Duty Box Wrench, 2 $\frac{1}{8}$ " opening		5.50
No. MA-60—Heavy Duty Box Wrench, 1 $\frac{7}{8}$ " opening		4.75
No. M-32—Tubular Handle, 30" long		3.25
No. PE-21—Display Board (only) 4' x 4'		5.10
No. PE-20—Maintenance Set Complete (weight 236#)		173.65

**No. PE-20 Industrial Maintenance Set**

The oTc Pulling System includes a range of sizes designed to meet practically every maintenance problem. For complete details covering range and capacities ask for Bulletins P-28 and GP-40.



## Industrial Maintenance Set

### No. PE-15

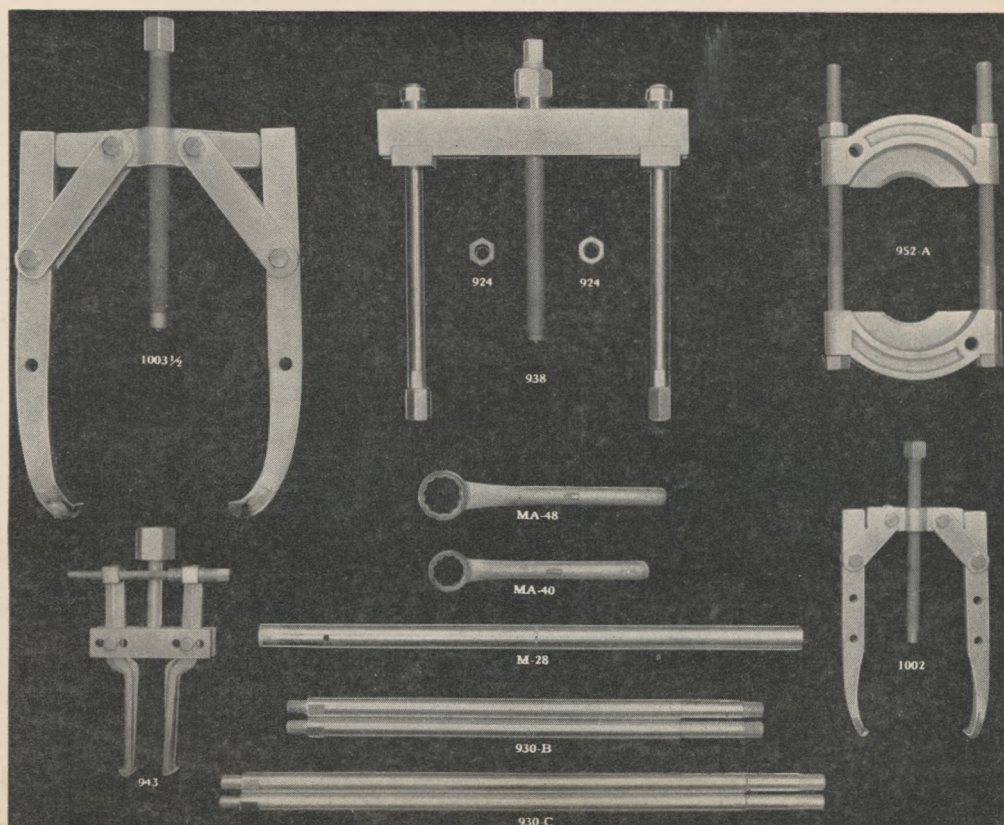
A universal set of Pullers designed especially for use on Diesel motors, Power Shovels, Track-type tractors, motors and all types of power equipment and machine tools. This set will accomplish 90% of the maintenance jobs involving the removal and replacement of bearings, gears, pulleys, wheels, pinions, etc.

The "down time" of machines can often be reduced and substantial savings made through the use of adequate maintenance tools. Costly bearings and other parts which might otherwise be damaged can be removed and replaced with a consequent saving of both time and parts.

The bulletin illustrated above gives complete details of this set. It will be furnished on request.

The set illustrated on the opposite page contains the following tools:

No.	Description	Price	No.	Description	Price
No. 1003½	Grip-o-matic Puller .....	\$25.75	No. 930-B	16½" legs for Push-Puller (per pair) .....	2.75
No. 938	Push-Puller with 9½" legs .....	15.85	No. 924	¾" x 5/8" threaded adaptors (per pair) .....	.90
No. 952-A	Pulling Attachment .....	13.25	No. MA-40	1¼" Heavy Duty Box Wrench .....	1.95
No. 943	Cup Pulling Attachment with 930-A Adaptor .....	10.75	No. MA-48	1½" Heavy Duty Box Wrench .....	3.40
No. 1002	Grip-o-matic Puller with long Arms .....	12.50	No. M-28	Tubular Handle, 24" long .....	2.25
No. 930-C	22¼" legs for Push-Puller (per pair) .....	3.50	No. PE-16	Display Board (only) 4' x 3' ....	4.50
			No. PE-15	Maintenance Set complete, 86 pounds on service board .....	97.35

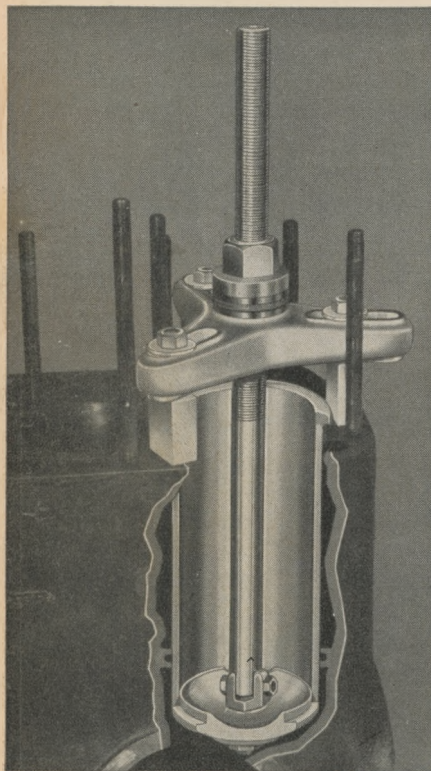


PE-15 INDUSTRIAL MAINTENANCE SET



## oTc Universal Cylinder Sleeve Puller

No. 970



Built to service over 100 makes and models of Trucks and Tractors using removable sleeves the new oTc Sleeve Puller is the only universal tool of its kind on the market.

This tool is designed to pull sleeves regardless of the position of cylinder head studs. Adjustable legs permit centering the tool easily while the hinged adaptor plates can be applied from the top and without taking the tool apart. The long pulling screw has a fine thread which assures an even, steady pull while the thrust bearing under the forcing nut reduces friction to a minimum and makes this difficult pulling job comparatively simple.

Where overall jobs carry flat rates and work must be carried on without interruption this Sleeve Puller will prove to be a real money maker. Over a makeshift method this tool will reduce actual working time approximately 75%.

Adaptor plates from 3" to 6" by eights can be furnished in any size to fit any sleeve within these sizes.

No. 970—oTc UNIVERSAL SLEEVE PULLER (Only) ..... \$14.75  
See prices of Adaptors on the opposite page.

### What It Fits

Tractor Year & Model	Plate Required	Tractor Year & Model	Plate Required
<b>ALLIS-CHALMERS</b>		E Tractor, A Tractor, 1936 to date ..... 970-15	
WC 1934 to date, W-25 Power Unit ..... 970-9		E 60 Power Unit, L-90 Power Unit, L Tractor, LO & KO Tractor, E Tractor, Special Bore ..... 970-19	
U up to 1936, UC up to July 1936, M up to 1936 ..... 970-12		E Tractor Special Bore K Tractor, 54 Speed Patrol ..... 970-17	
U-1936 to date, UC July 1936 to date, M-1936 to date, U-4 Power Unit, 42 Speed Patrol ..... 970-13		SO Tractor ..... 970-23	

**INTERNATIONAL TRACTOR**

F-12, I-12, O-12, W-12 Fairway 12, Farmall A ..... 970- 1

T-20 Tractor, F-20 Farmall ..... 970- 7

W-40 (Wheel) ..... 970- 7

T-35 Tractor ..... 970- 6

F-20, 10-20, Model 20, W-30 ..... 970-11

TD-35, 15-30, Gear Drive 1921 ..... 970-13

1929 ..... 970-13

WD-40, TD-40, 22-36, 1929 to date ..... 970-15

Farmall M, 1939 ..... 970-8M

Farmall H, 1939 ..... 970-4H

**INTERNATIONAL TRUCKS**

B-3, 1933-35, D-35, 1937 ..... 970- 4

B-4, C-35, C-40, 1933-37, D-40 ..... 970- 5

1937 ..... 970- 5

A-4, A-5, A-6, 1931-35 ..... 970- 6

C-55, C-60, D-50, 1935-37 ..... 970- 7

A-7, 1933-37 ..... 970-13

A-8, 1933-37 ..... 970-17

**CLEVELAND**

BD (Current) ..... 970- 5

40-D (Wet) 1934-36, DD ..... 970-12

(Wet) 1936 earlier ..... 970-12

80-D, 1933-36, FD-1936 earlier ..... 970-17

**CASE**

CI, CC, CO, Modified CI, CE-1929-30 ..... 970- 8

L, LI, Modified LI, LE, L Unit-1928-32 ..... 970-14

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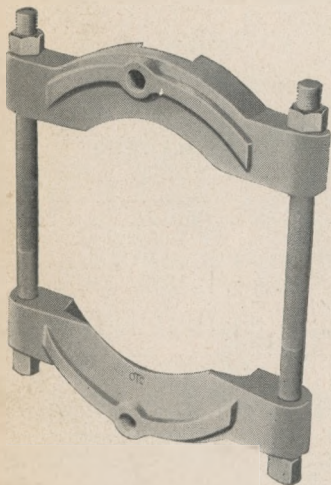
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## Sheave Puller Attachment

No. 680



No. 680

A new pulling attachment designed for the quick, easy removal of multiple V drive sheaves.

This tool eliminates the necessity for pulling on the outer flange of the sheave which might distort and damage the part. Any Multiple V drive sheave is difficult to remove because adequate gripping space is not available.

The knife edges of the attachment are forced down to the bottom of the V groove and the pulling strain is distributed evenly around a large part of the periphery.

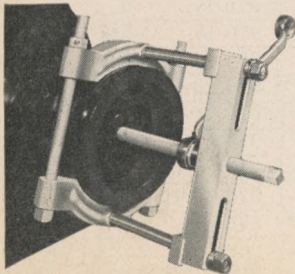
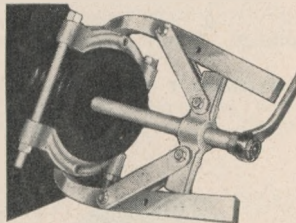
This attachment can also be used in pulling paper pulleys on motors, etc.

The actual pulling power is supplied by using either the No. 938 Push Puller described on page 54 or one of the Gripomatic Pullers listed and illustrated on page 42. The No. 1004 Puller is recommended.

This pulling attachment has a capacity of 10" and will pull any sheave up to this size. Weight 23 pounds.

No. 680—Sheave Pulling Attachment ..... \$15.00

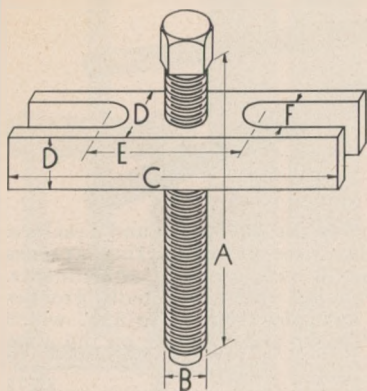
The illustration on the right shows the No. 680 Sheave Puller in use with the No. 1004 Gripomatic Puller. Slots in the attachment provide a place to hook the puller jaws. Where pulleys are to be removed, the attachment should be applied behind the pulley.



The illustration at the left shows the application of the No. 680 Sheave Pulling Attachment with the No. 938 Push-Puller. The legs of the puller are threaded into the tapped holes provided for that purpose and the force applied as shown.



## Pulling Bars



A series of pulling bars in various sizes is offered for special pulling operations. The slotted bars provide an adjustable range of sizes that fit many pulling requirements. The forcing screw in each instance is in proportion to the size and capacity of the block, and has the New oTc Power-Pitch thread.

The customer may provide his own tie rods to fit his particular requirements. In this manner the rods may be threaded into a piece of flat steel which is then placed behind the spokes of a pulley or wheel. The opposite end, of course, should be threaded for a nut to provide a shoulder against which to pull. The following table gives all necessary dimensions so that the right selection can be made.

No.	"A"	"B"	"C"	"D"	"E"	"F"	Weight	Price
630	9"	1 1/8"	8"	1 "	3 1/2"	1/2"	2 1/2 lbs.	\$ 5.75
631	10"	1 "	10"	1 1/2"	3 5/8"	5/8"	7 1/2 lbs.	8.50
632	12"	1 1/4"	13 1/2"	2 "	5 1/4"	3/4"	16 1/4 lbs.	12.50
633	15"	1 1/2"	18"	2 1/2"	8 1/2"	1 "	32 1/4 lbs.	22.50
634	15"	1 3/4"	22"	3 "	8 7/8"	1 "	54 lbs.	29.50

## Tractor Piston Ring Plier

No. 615



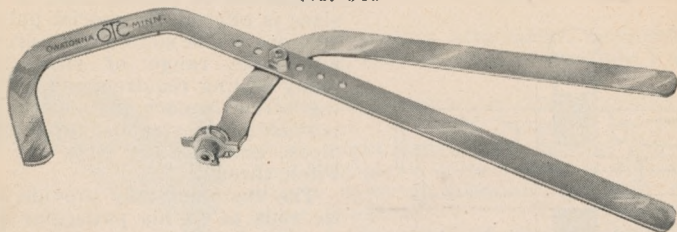
A newly designed, improved plier built to remove and replace piston rings on pistons of large diameters. Piston rings on large pistons are difficult to handle and care must be used to prevent springing them out of shape. This new oTc plier spreads the toughest rings without twisting or breaking and simplifies their removal and replacement.

The milled slots in the nose of the plier are designed to prevent the ring from slipping whether it is step-cut, diagonally-cut or a straight-cut ring.

No. 615—Tractor Piston Ring Plier .....\$2.25

**Tractor Ring Groove Cleaner**

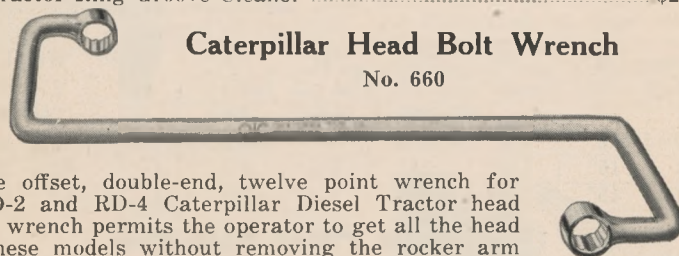
No. 640



A specially designed Ring Groove Cleaner for use on Trucks and Tractors. Four cutter blades handle the most popular sizes of piston ring grooves and the adjusting holes in the handle provide a wide range of adjustments.

Cutter blades are  $\frac{1}{8}$ ",  $\frac{3}{16}$ ",  $\frac{1}{4}$ ", and  $\frac{5}{16}$ " but will also handle grooves slightly over these sizes. This tool has a capacity from 3" to 6 $\frac{3}{4}$ " which adapts it to most of the popular makes of Trucks and Tractors on the market.

No. 640—Tractor Ring Groove Cleaner ..... \$2.75

**Caterpillar Head Bolt Wrench**

No. 660

A double offset, double-end, twelve point wrench for use on RD-2 and RD-4 Caterpillar Diesel Tractor head bolts. This wrench permits the operator to get all the head bolts on these models without removing the rocker arm assembly.

The Wrench is 15 $\frac{1}{2}$ " long with a  $\frac{7}{8}$ " opening on one end and a  $\frac{11}{8}$ " opening on the other. A very essential wrench for anyone servicing these tractors.

No. 660—Caterpillar Head Bolt Wrench ..... \$3.75

**McCormick-Deering Manifold Wrenches**

A single-end 12 point box wrench to operate on those hard-to-get-at manifold nuts on the F-20, F-30, W-30, and I-30 McCormick-Deering tractors. This wrench is essential equipment for every man servicing this make of tractor.

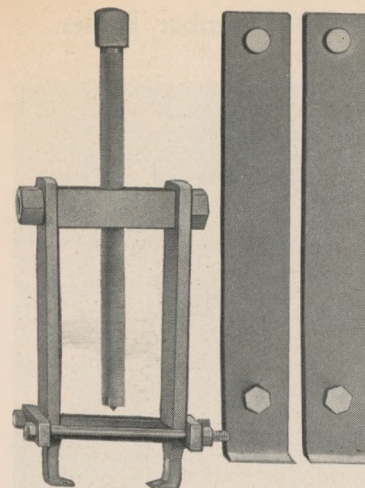
No. 651 Manifold Wrench  $\frac{11}{8}$ " opening ..... \$1.75

**Cletrac Bearing Puller**

A special puller designed to remove the tapered bearing from the rear wheel shaft on the Model HG tractor. This tool also removes the tapered bearing on the Model HG differential. With the long jaws illustrated with this tool it is possible to remove the bearing cup from the spacer plate on the Model EH tractor.

Length of CL-645 jaws from block to hook 7 $\frac{3}{8}$ ". Width of cross block 3 $\frac{1}{2}$ ". Width of Jaw  $\frac{3}{4}$ ". Length of CL-645-A jaws from block to hook 11 $\frac{1}{4}$ ". Width of jaws 2".

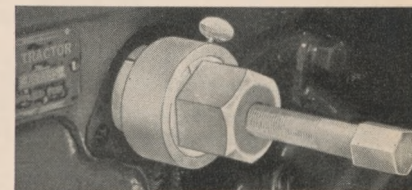
No. CL-645 Puller complete as shown ..... \$24.00  
No. CL-645 Puller (only) ..... 16.50  
No. CL-645-A Jaws (only) ..... 7.50



Two special pullers are offered for use on John Deere Tractors Model A and B. The picture illustrates the puller needed for removing the left hand cam shaft bearing on the Model A. It is necessary to remove this bearing to remove the shaft. A similar tool is available to remove the right hand counter shaft bearing on the Model B.

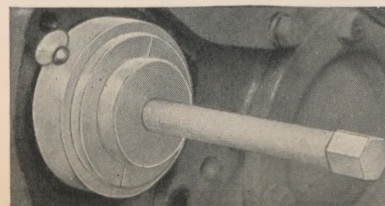
Dealers having the Governor Shaft Puller need buy only the split collets for these jobs.

No. JD-626 LH Cam Shaft Bearing Puller ..... \$5.75  
No. JD-627 RH Counter Shaft Bearing Puller ..... 6.25  
No. JD-622 Split Collet only for LH Cam Shaft Bearing ..... 3.00  
No. JD-623 Split Collet only for RH Counter Shaft Bearing ..... 3.50  
No. JD-628 Puller complete for both jobs ..... 9.25

**John Deere Pullers****Case Bearing Puller**

A special puller designed to remove the first reduction shaft bearing on the Model D and DC Case tractors. This bearing must be removed before the shaft can be taken out. A very necessary tool for the proper servicing of Case tractors.

No. C-649 Reduction Shaft Bearing Puller ..... \$9.00





**Pre-Combustion Chamber Puller**

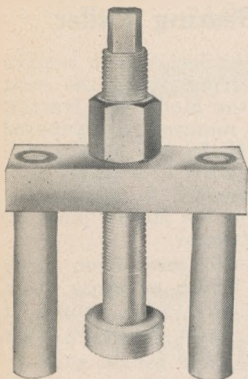
No. 663

This tool is used to remove the pre-combustion chambers or fuel valve cages on RD-6, 7 and 8 Caterpillar tractors.

These cages must be removed in order to remove and replace the copper washer when it becomes old and to prevent anti-freeze solution and water from leaking into the cylinders. These washers should be replaced at least twice yearly to assure good performance.

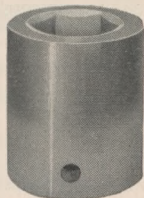
This puller does the job quickly and easily. Every operator of one or more of the above units should have this tool on hand at all times.

No. 663—Pre-Combustion Chamber Puller .....\$5.75

**Caterpillar Track Bolt Sockets**

Heavy, thick-walled hexagon sockets designed especially for use in removing track bolts on Caterpillar tractors. Service men will find that a great deal of time can be saved and the job simplified with these special sockets.

Due to the abuse and hard usage they must undergo, these sockets are not guaranteed against breakage or wear.



No.	Opening	Drive	Length	Price
TD-320	5/8"	3/4"	1 3/4"	\$ .90
TD-324	3/4"	3/4"	1 3/4"	.90
TD-328	7/8"	3/4"	2"	1.10
TD-330	1 1/8"	3/4"	2"	1.35
TD-336	1 1/8"	3/4"	2 1/4"	1.60

**International Pan Screw Driver**

(Attachment)

This attachment has a 3/8" square service and can be used with any standard Junior or ferret socket handle. It is a very practical tool for holding and lining up pan bolts when replacing the pan on late model International Trucks.

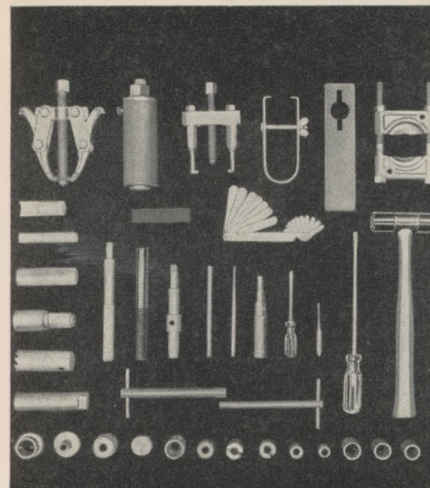
The cut-away illustration shows the construction of this tool. The spring is enclosed so that grease and grit cannot accumulate inside. 3" overall.

No. 609—International Pan Screw Driver Attachment .....\$1.25

**Magneto Service Tools**

The ever increasing demand for Magneto tools has brought about the development of a compact set, the first of its kind to be built.

It provides for the removal and replacement of every part, without loss of time and without damage to any part. Each tool in the set has been tested as to design and workmanship and is guaranteed to do the job recommended for it. There is no other set on the market as universal, compact or as practical as this one.



It handles all the service jobs on Wico, AP and C models, Fairbanks-Morse RV and R2 models, and Splittorf CD and 46 models.

Many of the tools included in this set are universal and can be adapted also for use on all makes and models of Magnetos on the market. For example, it can be used to pull the Impulse Coupling on the McCormick-Deering F-4 Magneto and does many other jobs on the F-4 and E-4-a magnetos.

The No. 1001 Grip-o-matic Puller and No. JD-950 Pulling Attachment which are included in this set can be utilized on a great variety of service jobs. In combination they will pull gears, bushings, bearings, pinions, and other closely fitted parts. Electrical service shops will find that this set will pay for itself in a very short time.

The set consists of 39 tools contained in a sturdy metal case 9 1/2" x 14 3/4" x 2". For complete details on this set ask for Bulletin No. JD-17.

Since many electrical shops and tractor service shops already have the No. 1001 Grip-o-matic Puller this set is priced both with and without this tool.

No. MT-40 Magneto Service Set in metal case .....\$43.95

No. MT-39 Magneto Set less No. 1001 Puller in case ..... 38.45



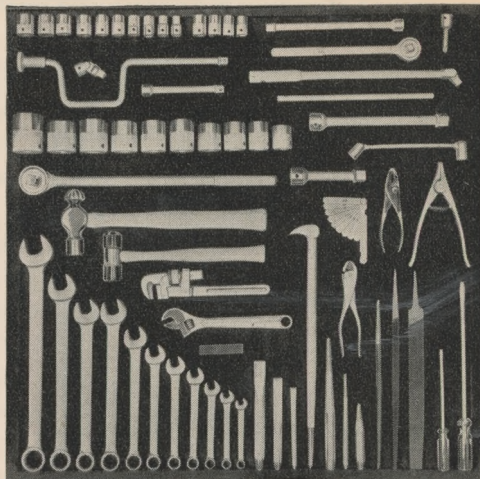


## Master Service Set

No. T-625

A complete set of hand service tools especially selected for the tractor maintenance man. It includes a wide variety of tools most suitable for this work which will enable any mechanic to do better and faster work. The servicing of modern tractors requires modern methods. The tractor service man who uses OTC tools can depend on uninterrupted performance and the ability to finish a job once it is started.

The set illustrated is housed in a substantial chest of heavy welded construction. For complete details on this chest No. 110 see page 24 of this catalogue.



The set as shown includes 10 standard 12 point sockets with  $\frac{1}{2}$ " square drive,  $\frac{7}{16}$ ",  $\frac{1}{2}$ ",  $\frac{9}{16}$ ",  $\frac{5}{8}$ ",  $\frac{11}{16}$ ",  $\frac{3}{4}$ ",  $\frac{13}{16}$ ",  $\frac{7}{8}$ ",  $\frac{15}{16}$ " and 1", four 8 point sockets,  $\frac{7}{16}$ ",  $\frac{1}{2}$ ",  $\frac{9}{16}$ ", and  $\frac{5}{8}$ " with seven handles to fit: Nos. H-161, H-176, H-13, H-183, H-173, H-172 and H-189. See pages 10 to 13.

Ten Heavy Duty sockets with  $\frac{3}{4}$ " square drive:  $1\frac{1}{8}$ ",  $1\frac{1}{4}$ ",  $1\frac{1}{2}$ ",  $1\frac{3}{4}$ ",  $1\frac{7}{8}$ ",  $1\frac{15}{16}$ ",  $1\frac{1}{2}$ ",  $1\frac{5}{8}$ ",  $1\frac{11}{16}$ " and  $1\frac{3}{4}$ " with 3 handles to fit: H-361, H-373 and H-371. See pages 25 to 27.

A complete set of 11 combination open end-box wrenches covering the following sizes:  $\frac{7}{16}$ ",  $\frac{1}{2}$ ",  $\frac{9}{16}$ ",  $\frac{5}{8}$ ",  $\frac{11}{16}$ ",  $\frac{3}{4}$ ",  $\frac{7}{8}$ ",  $\frac{15}{16}$ ", 1",  $1\frac{1}{16}$ " and  $1\frac{1}{4}$ " are also included. See page 37.

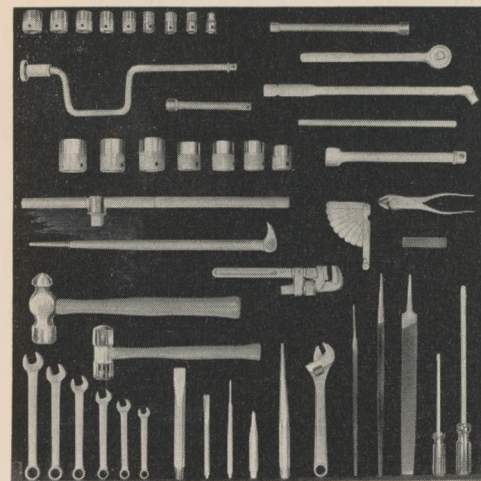
In addition, the set includes the following miscellaneous tools, 2 screw drivers No. 737, 741, H-166 Phillips attachment, BP-32 Ball Pein Hammer, PT-16 Soft Tip Hammer, No. 864 Feeler Gauge, AC-10 Honing Stone, 3 Files, 12" Flat, 10" Round and 12" Square, No. 712 Slip Joint Plier, No. 783 Side Cutter, DA-10 Adjustable wrench, PW-10 Pipe Wrench, No. 614 Snap Ring Plier, PB-45 Pry Bar, CC-24 and CC-12 Cold Chisels, MS-20 Special Chisel, TP-24 and TP-12 Taper Punches, CP-20 Center Punch, F-1618 Flex Wrench.

No. T-625 Master Tractor Service Set .....\$94.50



## Standard Service Set

No. T-630



The standard tractor service set is another which has been especially selected for tractor maintenance men. While it carries a smaller range of wrench sizes, it includes those sizes most commonly used. Additional sizes can be added as the need for them arises.

In addition to the wrenches a complete variety of miscellaneous tools are included in the set to make it practical on any make or model of tractor, or on other power machinery.

The set is housed in a substantial heavy chest No. 110, of welded construction which provides plenty of room for additional tools. For a complete description of this chest see page 24 of this catalogue.

The set as illustrated includes nine 12 point sockets with  $\frac{1}{2}$ " square drive:  $\frac{7}{16}$ ",  $\frac{1}{2}$ ",  $\frac{9}{16}$ ",  $\frac{5}{8}$ ",  $\frac{11}{16}$ ",  $\frac{3}{4}$ ",  $\frac{7}{8}$ ",  $\frac{15}{16}$ " and 1". Six Handles: H-161, H-176, H-13, H-183, H-173 and H-172. See pages 10 to 13.

Seven 12 point Heavy Duty Sockets with  $\frac{3}{4}$ " square drive:  $1\frac{1}{8}$ ",  $1\frac{1}{4}$ ",  $1\frac{1}{2}$ ",  $1\frac{3}{4}$ ",  $1\frac{7}{8}$ ",  $1\frac{15}{16}$ " and  $1\frac{1}{2}$ " with two Handles H-387 and H-373 are provided in the set. See pages 25 to 27.

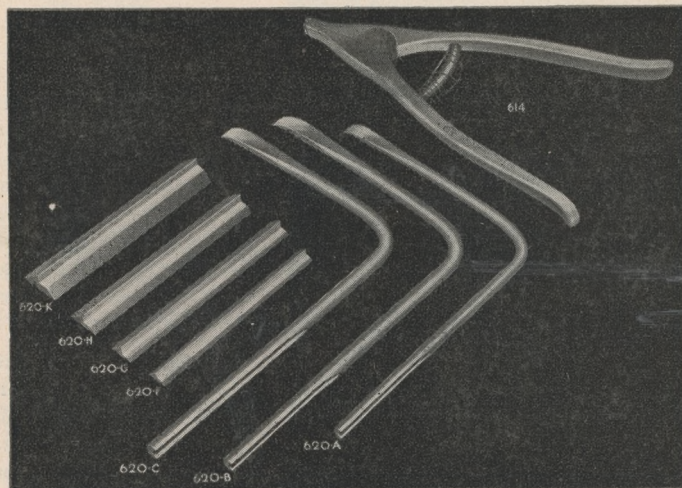
Six combination open end-box wrenches are also furnished in the following sizes:  $\frac{7}{16}$ ",  $\frac{1}{2}$ ",  $\frac{9}{16}$ ",  $\frac{5}{8}$ ",  $\frac{11}{16}$ " and  $\frac{3}{4}$ ". Miscellaneous tools include the following: Screw Drivers, 737, 741; Hammers, BP-32, PT-16; No. 864 Feeler Gauge, No. AC-10 Honing Stone, No. 783 Side Cutter; 3 files, 12" Flat, 10" Round, 12" Square, No. DA-10 Adjustable Wrench, No. PW-10 Pipe Wrench, No. PB-43 Pry Bar, Nos. CC-24 and CC-12 Cold Chisels, Nos. TP-24 and TP-12 Taper Punches, No. CP-20 Center Punch.

No. T-630 Standard Tractor Service Set .....\$63.45



## Snap Ring Service Set

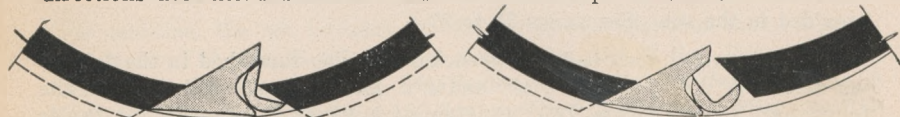
Patent Pending



The increased use of Snap Rings in tractors for the purpose of locating bearings on shafts and in housings and bores makes this set a necessity in every shop doing tractor service work.

The removal of Snap Rings is simplified by this set of Snap Ring tools manufactured exclusively by oTc. Included in the set are four sizes of triangular shaped, grooved wedges, three lifting cams and one pair of special pliers. The various sizes of cams and wedges provide a range that will handle practically any internal, expanding type snap ring.

Both cams and wedges are designed so that they can be ground back when the edges become nicked and worn. In grinding these tools care should be used to prevent burning and destroying the temper. Due to the nature of the work these tools must perform they are not guaranteed. Full directions are included with each set. Ask for special bulletin.

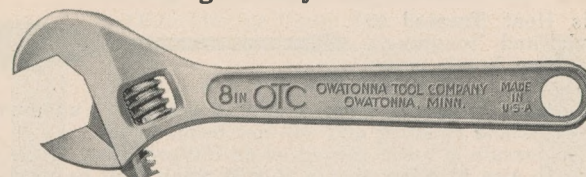


End view showing tool in position.

End view showing ring lifted.

No.	Price	No.	Price
620-A— $\frac{1}{4}$ " Lifting Cam	\$0.60	620-G— $\frac{3}{8}$ " Wedge	\$0.50
620-B— $\frac{3}{8}$ " Lifting Cam	.60	620-H— $\frac{1}{2}$ " Wedge	.50
620-C— $\frac{1}{2}$ " Lifting Cam	.60	620-K— $\frac{5}{8}$ " Wedge	.50
620-F— $\frac{3}{4}$ " Wedge	.50	620-S—Metal Box	.60
No. 620—Set as illustrated in Metal Case	\$5.90		
No. 620-P—Set as illustrated less pliers, in box	4.40		
No. 614—Snap Ring Plier (only)	1.50		

## Featherweight Adjustable Wrenches



Built of special alloy steel these oTc adjustable wrenches are light, thin, and exceptionally strong.

For all-around utility these wrenches have proven their value in the modern service shop. Well-balanced and light to operate they offer a wide range of adjustments for quick application to the job at hand. Fifty per cent stronger and lighter than old style carbon steel wrenches.

No.	Length	Capacity	Head Thickness	Weight	Price
DA-4	4"	$\frac{1}{2}$ "	$\frac{5}{16}$ "	2 oz.	\$1.10
DA-6	6"	$\frac{3}{4}$ "	$\frac{13}{32}$ "	5 oz.	1.10
DA-8	8"	$1\frac{1}{8}$ "	$\frac{13}{32}$ "	8 oz.	1.40
DA-10	10"	$1\frac{1}{8}$ "	$\frac{13}{32}$ "	13 oz.	1.75
DA-12	12"	$1\frac{1}{8}$ "	$\frac{3}{4}$ "	24 oz.	2.50
DA-15	15"	$1\frac{1}{8}$ "	$\frac{3}{4}$ "	49 oz.	3.50
DA-18	18"	$2\frac{1}{8}$ "	$1\frac{3}{16}$ "	92 oz.	6.00
DA-24	24"	$2\frac{1}{8}$ "	$1\frac{3}{16}$ "	146 oz.	9.00



## Pipe Wrenches

Accurately proportioned and correctly designed to give perfect balance these Pipe Wrenches are the class of the field. Only after using them day after day will you be able to appreciate their exceptional strength and practical efficiency.

A drop-forged frameless wrench with "ball and socket" nut that gives great flexibility and strength. A spring action that insures proper gripping position to the movable jaw and an Adjusting Nut that cannot fall out are two added features.

No.	Length	Capacity	Price
PW-6	6"	$\frac{1}{8}$ "— $\frac{1}{2}$ "	\$1.05
PW-8	8"	$\frac{1}{8}$ "— $\frac{3}{4}$ "	1.20
PW-10	10"	$\frac{1}{8}$ "—1"	1.50
PW-14	14"	$\frac{1}{4}$ "— $1\frac{1}{2}$ "	2.05
PW-18	18"	$\frac{1}{4}$ "—2"	2.95
PW-24	24"	$\frac{1}{4}$ "— $2\frac{1}{2}$ "	4.60
PW-36	36"	$\frac{1}{4}$ "— $3\frac{1}{2}$ "	8.50



## oTc Superloid Screw Drivers

The Bit is Heat Treated to give strength and toughness. Will not twist or break under severe strain.



The entire shank is forged from a special analysis Vanadium Steel, is tempered to withstand twisting and will not bend.

The hexagon ferrule is upset-forged as an integral part of the shank and is accurate as to size in order that a Box Wrench may be used.

The Handle is a lustrous Black Superloid, grooved and knurled to prevent the hand from slipping. It is possible to get a firm grip even though the hand may be greasy. oTc Superloid Handles are Shockproof and will resist pounding and abuse as no other handle made. Shanks highly polished plated finish.



Item No.	Size Bit	Length Over-all	Price
719	$\frac{1}{4}$ "	6"	\$1.10
720	$\frac{3}{8}$ "	9"	1.25
721	$\frac{3}{8}$ "	12"	1.50
722	$\frac{1}{2}$ "	15"	1.90

## oTc Stubby Screw Driver

Shorter, tougher and better than ever. A Screw Driver built to get into tight places and to stand plenty of hard usage. Shock proof, indestructible, knurled handle that is large enough to afford a good grip.

No. 723  $\frac{3}{8}$ " Bit, 4" OA ..... \$1.00

## Superloid Square Shanks

A new oTc product designed to give a maximum of service and efficiency at a minimum cost. Through the use of the oTc Superloid carrying the oTc design we have evolved a shock-proof, indestructible handle that can be gripped without fear of shock or slipping.

A solid square shank forced into the handle at great pressure prevents the handle from turning on the shank. Shanks are forged from a special Chrome Vanadium Screw Driver Steel and tempered in electrically controlled furnaces.

Built for service and long wear in popular sizes only and priced right.

Item No.	Length of Blade	Size Square Stock	Length Over all	Price
736	3 "	$\frac{1}{8}$ "	4 $\frac{1}{4}$ "	\$0.45
737-A	2 $\frac{3}{4}$ "	$\frac{3}{16}$ "	6 "	.65
737	6 "	$\frac{3}{16}$ "	9 $\frac{1}{2}$ "	.75
738	9 "	$\frac{3}{16}$ "	12 $\frac{1}{2}$ "	.85
739	1 $\frac{1}{4}$ "	$\frac{1}{4}$ "	3 $\frac{1}{4}$ "	.75
740-A	3 $\frac{3}{4}$ "	$\frac{1}{4}$ "	7 "	.85
740	6 "	$\frac{1}{4}$ "	10 "	1.00
741	10 "	$\frac{1}{4}$ "	14 "	1.15
742	12 "	$\frac{5}{16}$ "	16 $\frac{1}{2}$ "	1.30



## Special Screw Drivers

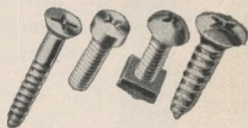
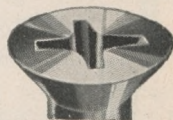
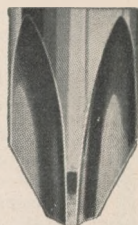
(For Phillips Cross Slot Screws)

Pat. No. 2,046,840

For the new type Phillips Cross Slot Screw which is being used extensively in the late model cars, OTC offers these new four-flute drivers with the Amberloid, Shock-proof handle. This is the only type screw driver which can be used effectively on these screws.

It provides greater leverage with less danger of slipping because the point is tapered and fits firmly into each of four slots.

No. 733 is used particularly on Door Hinge Screws on Chrysler products.



No.	For Phillips Screw No.	Length Over-All	Price
744	1	6 "	\$0.75
734	2	8 1/2 "	.85
735	3	10 "	1.10
733	4	13 1/2 "	1.35
743	2-Stubby	3 1/2 "	.75

## Neon Screw Drivers

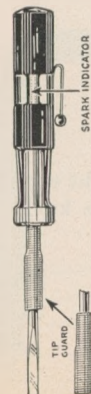
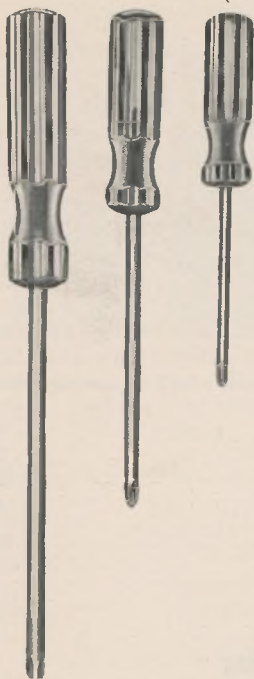
Handy adjusting Screw Drivers for constant use, plus the spark testing device makes these drivers extremely practical in servicing all internal combustion motors. The flash in the tube is difficult to distinguish in bright sun light. Shade handle if necessary.

A good spark will produce a brilliant orange flash. A plug that is entirely shorted, fouled or has a cracked porcelain will not produce any flash. A plug with too narrow a gap or one which is partially fouled will produce a thin, stringy flash. With the engine idling, there will be uniform flashes as the cylinders fire. If between the principal flashes there is a secondary or weaker flash this indicates a leakage.

No. 725—Neon Screw Driver (Pocket size) .....\$0.50

No. 726—Neon Screw Driver 4" Blade ..... .75

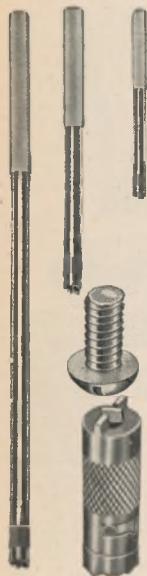
Extra Neon Tubes for No. 726 ..... .20







## oTc Screw Starters



The Screw Starters illustrated here are the most practical tools of their kind for automotive work. Properly designed and finely made these starters maintain a positive grip making it almost impossible to drop or lose a screw. They are rigid and will not bend in operation.

Any one of these little tools will give you a great deal of satisfaction and if used properly will last indefinitely. To confine their use only to the starting of screws these tools do not carry a guarantee.

Furnished in three lengths. The short or 2½" for use behind the dash and in other close places. The 5½" for general work and the 9¼" for use on work in inaccessible depths.

No. 727—2½" long .....	\$0.90
No. 728—5½" long .....	1.00
No. 729—9¼" long .....	1.15

## oTc Offset Screw Drivers

### Hammerhead Type

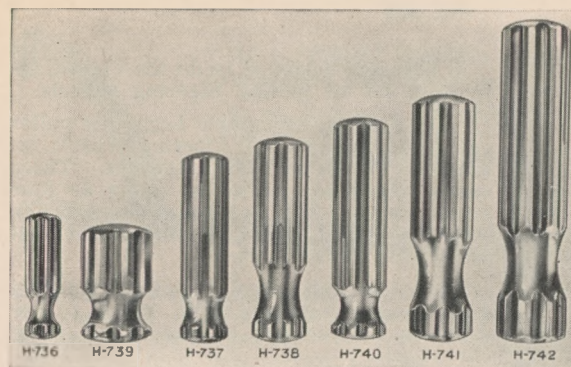


The Offset Screw Driver of the hammerhead type with bits at right angles to each other is considered the most practical and efficient in this kind of tool. It makes reaching inaccessible screws a simple operation.

Item No.	Bit	Length Over-All	Price
730	1½"	3½"	\$0.50
731	¾"	6 "	.60
732	1½"	8 "	.95



## Amberloid Handles



Shock-proof, indestructible handles have become a necessity in all automotive repair work. They provide a firm grip and will not chip or break.

They are practical also when used as file handles. Finely formed and grooved, each handle is drilled with a hole proportionate in size to its diameter.

Handles may be drilled to larger sizes if desired. Be-

fore driving onto a Screw Driver Shank, handle should be immersed in warm water a few minutes to eliminate danger of cracking.

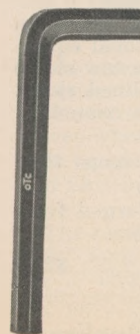
No.	Diameter	Size Hole	Hole Depth	Length	Price
H-736	5/8"	3/4"	3/4"	2 1/8"	\$0.15
H-737	7/8"	1 1/4"	1 3/4"	3 1/4"	.30
H-738	1"	1 1/4"	1 3/4"	3 1/2"	.35
H-739	1 1/8"	1 3/4"	1"	2"	.30
H-740	1"	1 3/4"	1 3/4"	3 3/4"	.40
H-741	1 1/8"	2"	2"	4"	.55
H-742	1 3/8"	2 1/2"	2"	5 1/2"	.70

## †oTc Set Screw Wrenches

Exceptionally useful and indispensable in modern shops. Late motors of all kinds are using hollow head Cap Screws and Hollow Set screws on which these wrenches must be used.

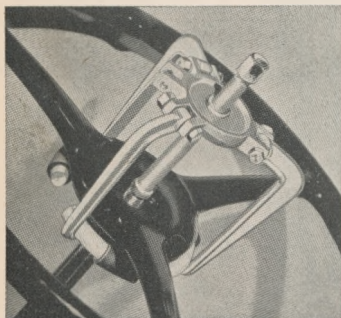
Item No.	Size	Fits Set Screws	Fits Hollow Head Cap Screws	Price
W-2	5/16"	8		\$0.10
W-3	3/8"	10 & 12		.10
W-4	1/8"	1/4"	8	.10
W-5	5/16"	1/8"	No. 10	.10
W-6	1/8"	3/8"	1/4"	.15
W-7	3/16"	1/8"	5/16"	.15
W-8	1/4"	1/2"	3/8"	.20
W-10	5/16"	5/8"	3/8" and 7/16"	.25
W-12	3/8"	3/4"	1/2"	.30

W-13—Set of 9 Above Wrenches (in Kit) ..... 1.45



## Steering Wheel Puller

No. 853



A new tool designed to do the exceedingly hard job of pulling Steering Wheels.

Having three Adjustable Legs this puller can be adjusted to pull Steering Wheels regardless of the number of spokes. Three spoke wheels are pulled as easily as four spoke wheels. This feature makes the oTc Steering Wheel Puller the most universal of its kind on the market.

The steel ring, against which the tool pulls, comes equipped with three rubber cushions or bumpers to prevent marring the wheel.

The jaws as well as the circular hub are drop-forged and the entire tool is built for a life-time of service.

No. 853—Steering Wheel Puller .....	\$6.50
No. 853-L—Large Ring for Chrysler and General Motor Cars .....	.75
No. 853-B—Steering Post Nipple for Buicks .....	.25

## Pitman Arm Wedge

No. 844



The new oTc Pitman Arm Pulling Wedge fills the general need for a satisfactory method of doing this difficult job. In one simple, fast, operation Pitman Arms can be pulled without difficulty and without additional equipment. The wedge end of the tool is placed in position and with a few sharp raps with a hammer the Pitman Arm is forced off from the splined shaft. It takes the place of complicated pulling tools which oftentimes cannot be used in close quarters and because of surrounding obstructions.

Works on most of the late cars and is more universal in its scope than any other Pitman Arm Puller made.

Length 12" over all. Distance between prongs 1½". Drop-forged from ⅝" Chrome Vanadium Steel and heat-treated to give long service.

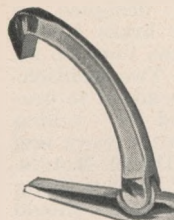
No. 844—Pitman Arm Wedge .....	\$2.75
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**The oTc Trade Mark is Your Guarantee of Quality**



**Heavy Duty Spanner Wrench**

No. 885



An extremely practical wrench in any shop servicing Trucks and Tractors.

It is used very effectively on differential Turret Nuts to adjust Pinion Bearings. Also transmission Turret Nuts, exhaust pipe locknuts, packing nuts and other adjustments

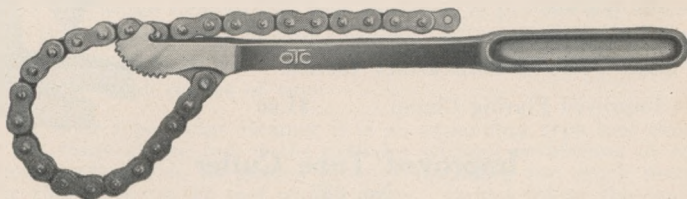
requiring a wide, flexible capacity and leverage. A very practical wrench for servicing International Trucks, Caterpillar Tractors, etc. The entire wrench is drop-forged from Chrome Vanadium Steel and properly heat-treated for long, satisfactory service.

Range 1½" to 4"—19" long.

No. 885—Heavy Duty Spanner Wrench .....\$3.25

**oTc Universal Chain Wrench**

No. 887



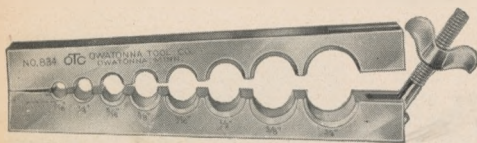
The new oTc Universal Chain Wrench is one of the handiest and most practical wrenches ever built for the maintenance trade. It is designed particularly for turning large nuts or pipe in close quarters and inaccessible places where long leverage is not essential.

It is exceptionally practical on Chevrolet Knee Action Caps, Hub Caps and Shifting Lever Caps. Takes hexagonal, octagonal as well as round material.

The handle is drop-forged 12" long and the chain is an extended pin type 15¾" long and having a tensile strength of 3,200 pounds. Capacity ⅝" to 4½". This chain is not guaranteed.

No. 887—Chain Wrench .....\$3.75  
Extra Chain ..... 1.50

## Otc Improved Pipe Swage



The new oTc Pipe Flaring Block has been designed to handle copper or brass tubing used on oil and gas lines on all types of motors. Two additional sizes have been added to provide for  $\frac{5}{8}$ " and  $\frac{3}{4}$ " tubing found in refrigeration work and for oil lines on Diesel Motors.

This tool clamps the tubing firmly and holds it while flare or joint is being made. For a perfect joint the oTc Flaring Clamp illustrated below should be used with this block. Sizes of tubes handled are  $\frac{1}{8}$ ",  $\frac{1}{4}$ ",  $\frac{5}{16}$ ",  $\frac{3}{8}$ ",  $\frac{7}{16}$ ",  $\frac{1}{2}$ ",  $\frac{5}{8}$ " and  $\frac{3}{4}$ ".

No. 834—Improved Flaring Block .....\$2.50

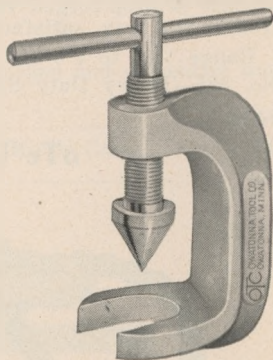
## Pipe Flaring Clamp

No. 836

Redesigned to handle a wider range of sizes this clamp used with the No. 834 Flaring Block illustrated above does a neat, even job. It eliminates the danger of splitting the tubing and does a job which insures a perfect fitting joint. No adjustments to make and can be used with almost every other flaring block on the market.

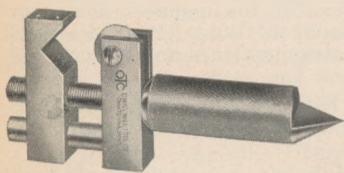
Easily and quickly applied and guaranteed to give many years of satisfactory service.

No. 836—Improved Flaring Clamp .....\$1.00



## Improved Tube Cutter

No. 837



A tube cutter built and designed by oTc to cover a range of brass or copper tubing from  $\frac{1}{8}$ " to 1". The cutting wheel being made from heat-treated stock remains sharp over a long period and does an effective job of clean cutting.

The V-shaped Reamer on the end of the knurled handle removes the burr from the inside of the tubing after it has been cut. It is located so that it is not in the way when cutting.

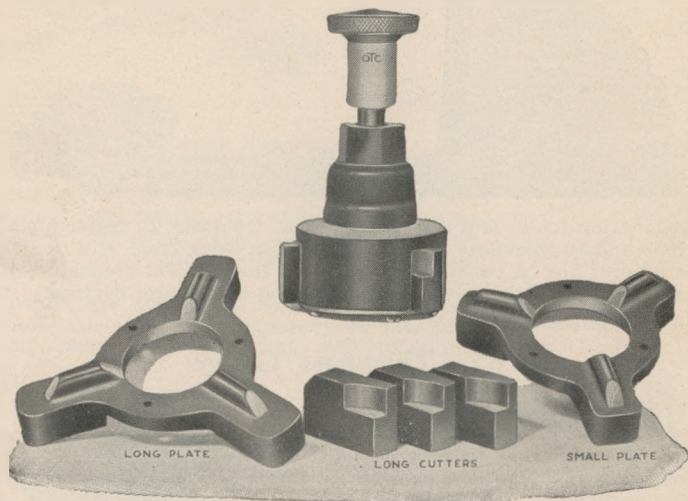
No. 837—Improved Tube Cutter .....\$1.75  
Extra Cutting Wheel for Above ..... .35





## oTc Universal Ridge Reamer

No. 960



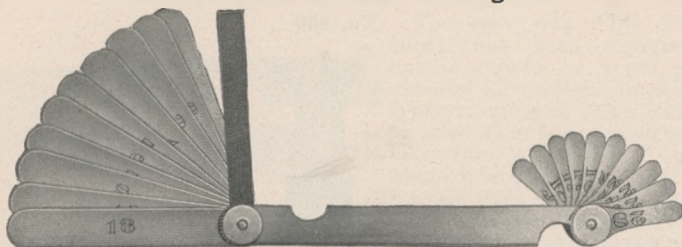
The new oTc Ridge Reamer has been designed to provide a greater range of service than ever before. It works equally well on recessed cylinders and cylinders which are flush with the face of the motor block. It can be adjusted to work on all makes of cars.

Like the older type Ridge Reamer it is an expanding type tool which will remove the ridge at the top of the cylinder without scratching or scoring. The cutters acting also as guides prevent removing too much metal and when the ridge is gone the tool stops cutting. Guides follow the contour of the cylinder removing metal only where necessary to conform to the rest of the cylinder. For small bore motors the small plate is used with the short cutters. For larger bore motors the large plate is used with the long cutters. Plates are fixed to the body of the tool with three machine screws.

This tool can be purchased complete or in any combination desired.

No. 958—With Small Plate & Short Cutters, Range $2\frac{1}{8}$ " to $3\frac{7}{8}$ " .....	\$6.00
No. 959—With Large Plate & Long Cutters, Range $3\frac{5}{8}$ " to $4\frac{7}{8}$ " .....	6.50
No. 960—Complete as illustrated, Range $2\frac{1}{8}$ " to $4\frac{7}{8}$ " .....	8.50
No. 855—Super Ridge Reamer, Capacity 3" to 4" .....	5.50
No. 957—Ridge Reamer for Model 60 Ford .....	5.00
Extra Cutters, Long or Short, Set of 3 .....	2.00

### oTc Combination Gauge

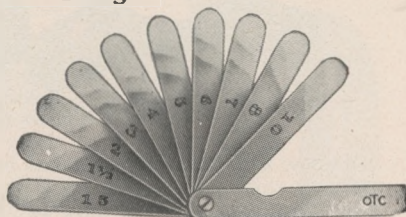


A Combination feeler and thickness gauge. Contains 10 feeler blades from .002 to .013 and 10 thickness blades for ignition work from .012 to .032. Also contains a point file. A two-in-one gauge for the efficient mechanic. Knurled lock nuts on each end permit a rapid selection of the size desired.

No. 864—Combination Gauge .....\$1.75

### oTc Thickness Gauge

A high grade tool of tested accuracy. Blades made from imported heat treated steel  $3\frac{1}{2}$ " long and with sizes etched on each blade. Equipped with knurled nut to permit rapid selection of blade desired and to lock other blades not in use firmly inside the handle. Contains 10 blades .002", .003", .004", .005", .006", .007", .008", .010", .012", .013".



No. 860—Thickness Gauge (as pictured) .....\$1.00

Extra Blades. Above sizes and .011, .015, .016 and .020. Each ..... .15

### Thickness Gauge Stock

In Metal Box  
Twenty-five Foot Lengths— $\frac{1}{2}$ " Width

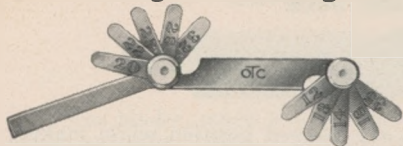
Size	Price	Size	Price
.0015	\$6.00	.008	\$2.25
.002	4.15	.009	2.25
.003	3.95	.010	2.00
.004	2.35	.011	2.00
.005	2.00	.012	1.85
.006	1.95	.013	1.85
.007	2.25	.016	1.85

12" of any above sizes .....\$0.25

For Chevrolet Thickness Gauge see page 132



## oTc Ignition Gauge



Extra Blades ..... \$ .15

An extremely handy gauge for adjusting spark plugs, ignition and distributor points. Ten small, accurately ground blades: .012, .013, .014, .018, .020, .022, .025, .028, .032, .035 and a high grade 3" point file.

No. 862—Ignition Gauge ..... \$1.10  
No. 863—File only ..... .20

## Wire Point Gauge

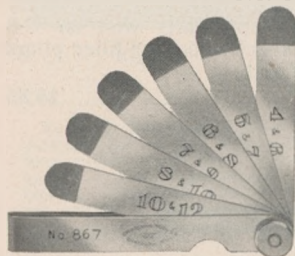
A new Gauge that will permit quick, efficient use on distributor points and spark plugs on late model cars. New distributors and spark plugs do not provide sufficient room for the old type gauges and a wire gauge of this type is necessary.

The points are accurately built of piano wire. The gauge carries 8 sizes necessary on late models—.022, .025, .027, .028, .030, .032, .035 and .040.

No. 866—Wire Point Gauge ..... \$1.10

## Go and No-Go Gauge

No. 867



A two-in-one gauge to meet the requirements of modern valve adjusting. The shoulder on the blade tips gives a "Go-No-Go" adjustment that is faster and more accurate than the ordinary feeler gauge.

This tool has six blades covering the most popular sizes, and with two sizes on each blade: 4-6, 5-7, 6-8, 7-9, 8-10 and 10-12 thousandths.

No. 867—Go-No-Go Gauge ..... \$1.10

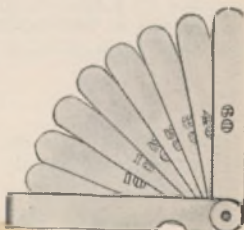
## Voltage Regulator Gauge

No. 859

All late model cars have a voltage and current regulator, the contact points of which must be operated at the manufacturers recommendations.

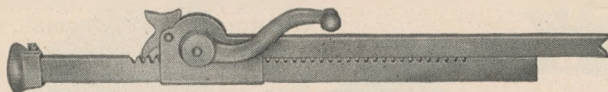
This new oTc Gauge provides the gauge sizes necessary for use on these points. While some regulators require .075 and .080 these sizes are not obtainable and must be obtained by using two blades of the right combination. This gauge carries the following sizes: .010, .015, .020, .025, .035, .040, .060 and .070 thousandths. Each blade is 1/2" wide and 3 1/2" long.

No. 859—Voltage Regulator Gauge ..... \$1.00





### No. 850 Pedal Jack



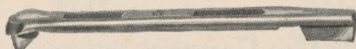
Designed for holding brake pedal in any desired position while making brake adjustments. It is put into place by putting the base or T against the heel board and the notched or V end against the pedal. Turn the crank that operates the pinion and rack to bring the pedal to desired position. Has a positive, automatic lock.

Very useful when removing or replacing oil pan. Can be used on all split type tire rims.

Can be used to check looseness of main bearings by running notched end under the crank shaft and using a gentle back and forth motion of the crank to indicate the amount of looseness.

No. 850—Pedal Jack .....\$2.50

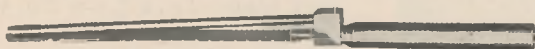
### oTc Tie Rod Adjusting Tool



Designed to work in close quarters this tool works perfectly where adjusting Tie Rods on all late model cars. The double end offset bits are closely coupled and accurately milled to size. Works exceptionally well on V-8 Fords and can also be used to remove and replace shock absorber filler plugs on Chevrolet and Pontiac. Drop forged. Plated finish.

No. 833—Tie Rod Adjusting Tool .....\$0.85

### Midget Hack Saw



An extremely practical tool for splitting bushings, sawing oil and gas lines and other work in close places. It is so designed that it will enter and operate in a hole as small as  $\frac{3}{8}$ " if necessary. A very necessary piece of equipment in the modern shop.

No. 819—Midget Hack Saw Frame with one blade .....\$0.85

### Midget Blades

For use with the No. 819 Frame. Fixed pins in each end permit the blade to be tightened rigidly in the frame.

1 Doz. Midget Blades .....\$0.90

$\frac{1}{2}$ " Doz. Midget Blades ..... .50

1 Only Midget Blade ..... .10





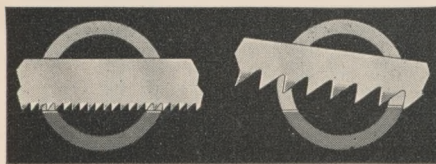
## \*Silver Steel Hack Saw Blades



These blades, made of high speed steel, are guaranteed to cut more metal than any other blade. They will actually last longer and give more service under severe conditions. They are easier to use because they cut faster and exactly for these reasons Silver Steel Blades are more economical in the long run.

They can be purchased in 18, 24 and 32 tooth blades in 10" and 12" lengths as follows:

Amount	Length	Price	Amount	Length	Price
Each	10"	\$0.35	Each	12"	\$0.40
½ Doz.	10"	2.00	½ Doz.	12"	2.60
1 Doz.	10"	3.60	1 Doz.	12"	4.40



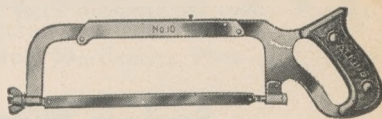
Right

Wrong

It is very important when using Hacksaw Blades, for best efficiency to use a blade with the proper number of teeth per inch for the material to be cut. Two or more teeth cutting at all times as illustrated.

## \*Otc Hack Saw Frame

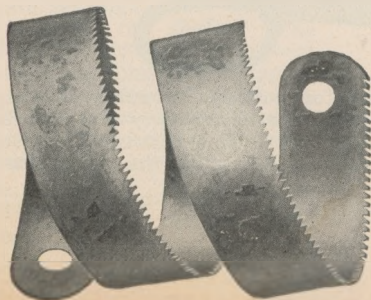
Perfectly balanced to direct entire stroke on cutting edge. Fitted with large non-breakable hard rubber pistol grip handle. Gives perfect control. Frame adjustable for 8" to 12" blades. Adjustable for cutting at four different angles.



No. 820—Hack Saw Frame .....\$2.25

## Otc Hack Saw Blades

An exceptionally good blade for garage use. Double heat treated to give a hard tooth and flexible back, to avoid breaking or tearing out teeth. Made in 18-tooth for cast iron and mild steel, 24-tooth for steel and general purpose work and 32-tooth for tubing and sheet metal in 10" and 12" lengths.



Amount	Length	Price
½ Doz.	10"	\$0.50
1 Doz.	10"	.90
3 Doz.	10"	2.50
½ Gross	10"	4.95
1 Gross	10"	9.50
½ Doz.	12"	.60
1 Doz.	12"	1.10
3 Doz.	12"	3.10
½ Gross	12"	6.10
1 Gross	12"	11.50

## Water Pump Plier



oTc offers a Water Pump Plier which adapts itself more readily to the exacting demands of modern mechanics. Having seven adjustments it covers a wider range of use. The jaws maintain a parallel position at each adjustment up to a maximum two inch opening.

The plier is thin, yet strong and sturdy. It will handle all pump nut adjustments in addition to its use as a general utility tool.

No. 706—Water Pump Plier .....\$1.75



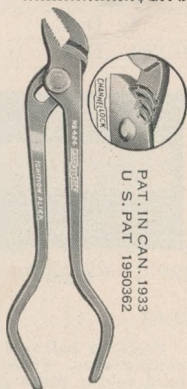
No. 705

## Ignition Pliers

Especially built for work on all kinds of ignition, electrical and radio jobs. Both pliers have a range of adjustments which permits their use on a wide variety of jobs. The popular Champion plier has the well known channellock feature which prevents slipping. Two types are offered: one with the full fashioned handle and the other with the straight handle.

No. 705 Ignition Plier 4½" long .....\$1.00

No. 780 Ignition Plier 4½" long ..... 1.40



PAT. IN CAN. 1933  
U.S. PAT. 1930362

## Scrolsnip Pliers



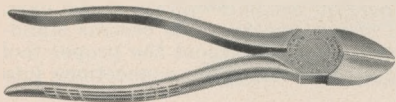
These cutting pliers are especially fine for cutting irregular shapes, scrolls and intricate patterns. Circular cutting in stiff or heavy material is much easier with this type of cutter than any other. It is furnished in two sizes. The small size for cutting gaskets, shims, etc., while the larger size can be used for tin and heavier metal.

No. 715—7" Scrolsnip .....\$1.50

No. 716—12" Scrolsnip ..... 2.00



### Diagonal Cutters

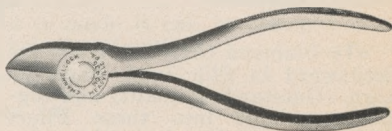


A heavy duty side cutter that will meet all the requirements of the experienced mechanic. It is sturdily built with handles formed to fit the hand and joints fitted and lapped for ease of operation. Drop-forged from special alloy steel.

No. 782 Diagonal Side Cutter 7" long .....\$2.40

### Diagonal Cutters

Built particularly for close work but of sturdy construction, this side cutter is a necessity in every tool box. Lighter than the average it has form fitting handles and lapped joints. This tool will give long and satisfactory service.



No. 783 Diagonal Side Cutter 6" long .....\$2.00

### Battery Plier

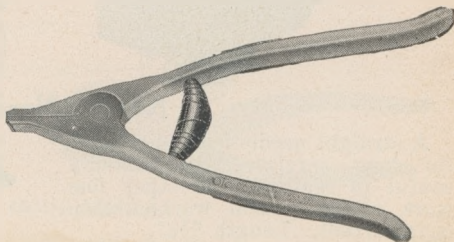


A well designed plier to handle a difficult job. They are self-gripping and the jaws take a positive hold on acid corroded terminal nuts.

No. 703—Battery Plier .....\$1.10

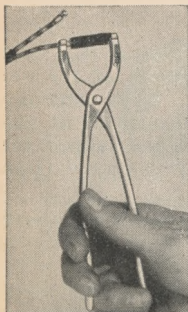
### Snap Ring Plier

This is an indispensable tool built to remove and replace contracting type Snap Rings which are used to locate bearings, gears and other parts on shafts. The Jaws are grooved to prevent the Snap Ring from slipping once the plier grips it. A strong, telescope spring simplifies the use of this fine tool.



No. 614—Snap Ring Plier .....\$1.50

## Wire Connection Coupler



This special plier is built for use in forcing light wire connections into connection couplers on late model cars. The use of this kind of a connection has become standard on many makes of cars and without the proper tool it is extremely difficult to insert these connections into the coupling.

The accompanying illustration shows how this job is simplified with the new oTc Connection Coupler.

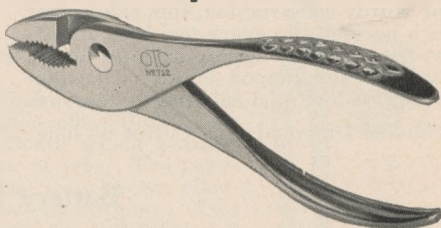
No. 710—Wire Connection Coupler .....\$0.85

## \*Diamond Grip Plier

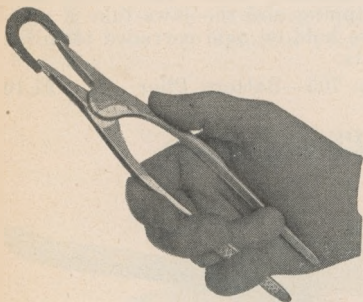
oTc Diamond Grip Pliers are the last word in Slip Joint Plier design. Outstanding quality and ruggedness built into these Pliers make them highly desirable and a valuable piece of equipment in any tool box.

No. 711—Slip Joint Plier 5" \$1.00

No. 712—Slip Joint Plier 6" 1.25



## Lock Ring Plier



This Plier is designed to spread the horseshoe lock rings used on all types of hydraulic brakes, transmission and differential parts and in other points on late model cars. The use of lock rings is more prevalent than ever and since they are usually loose in position it is extremely difficult to spread them by prying. This lock ring plier does the job easily and quickly.

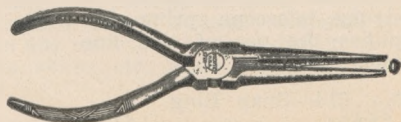
No. 714—Lock Ring Plier .....\$1.35

## Needle Nose Plier

A straight needle nose plier built for long service. Exceptionally useful in ignition and other fine work where careful workmanship is important. Length 7½".

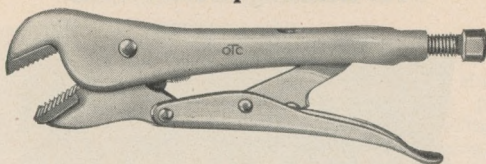
No. 708 .....\$1.75

No. 707—With Side Cutter .... 2.00





## Vise-Grip Wrench



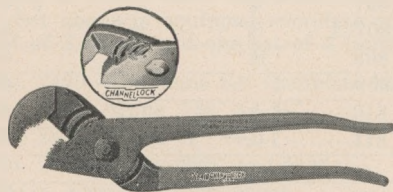
A general utility garage tool whose powerful gripping properties make it a valuable tool in any shop. A two-in-one tool which serves all the purposes of a plier combined with the utility of a gripping wrench.

Suitable for use on bolts with rounded heads, brake rods, battery terminal nuts, studs and as a one-man bolt holder to keep bolts from turning when removing the nut. After the adjustment is made it can be clamped into position with the assurance that it will hold indefinitely.

No. 717—Vise-Grip, Maximum adjustment  $1\frac{1}{8}$ " .....\$1.65

No. 718—Vise-Grip, Maximum adjustment  $1\frac{1}{4}$ " ..... 1.95

## Channellock Pump Plier

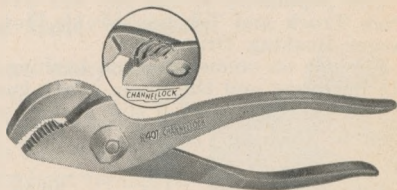


The popular channellock feature is incorporated in this pump nut plier giving it a capacity from  $\frac{1}{2}$ " to  $1\frac{1}{8}$ ". Like other pump nut pliers it is particularly effective on packing gland nuts on practically all cars, trucks and small industrial engines.

No. C-420—Channellock Pump Nut Plier,  $9\frac{1}{2}$ " long .....\$2.00

## Channellock General Purpose Plier

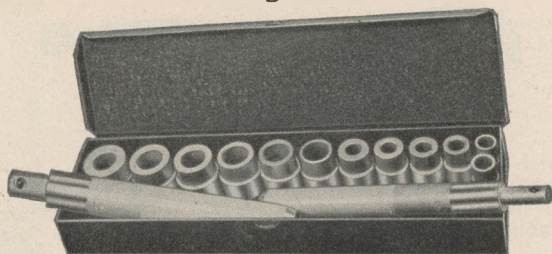
Two general purpose pliers in this type are offered. The large size  $9\frac{1}{2}$ " long with 4 adjustments and the smaller size with 2 adjustments and 7" long are the most popular ones for service or maintenance shops. Their positive grip permits turning pipes, bolts or nuts whose corners have been rounded off. Quickly adjusted and easily applied.



No. C-410—Channellock Plier,  $9\frac{1}{2}$ " long, cap.  $\frac{3}{8}$ " to  $1\frac{1}{8}$ " .....\$2.25

No. C-407—Channellock Plier, 7" long, cap.  $\frac{1}{8}$ " to  $\frac{1}{2}$ " ..... 1.45

## oTc Bushing Driver Sets



The large variety of replaceable bushings used on Automobiles, Trucks, Tractors and Electrical Motors calls for a number of Bushing Tools that will remove the old Bushing quickly and install a new one without damage to the Bushing.

The Bushing Driver Set listed here is a real time saver. It consists of a complete range of sizes of Step Collars to handle Bushings on Tie Rods, Spindles, Water Pumps, Pistons, Connecting Rods, Generators, Steering Gears, Distributors, Transmissions, Spring Bushings, etc.

No.	Bushing I. D.	Bushing O. D.	Price	No.	Bushing I. D.	Bushing O. D.	Price
800	$\frac{1}{2}$ "	$\frac{5}{8}$ "	\$ .30	807	$\frac{7}{8}$ "	1 "	\$ .45
801	$\frac{9}{16}$ "	$\frac{11}{16}$ "	.30	807-A	$\frac{7}{8}$ "	$\frac{15}{16}$ "	.45
802	$\frac{5}{8}$ "	$\frac{3}{4}$ "	.30	808	$\frac{15}{16}$ "	$1\frac{1}{16}$ "	.45
803	$\frac{11}{16}$ "	$\frac{13}{16}$ "	.30	809	1 "	$1\frac{1}{8}$ "	.45
803-C	$\frac{3}{32}$ "	$\frac{31}{32}$ "	.30	810	$1\frac{1}{16}$ "	$1\frac{3}{16}$ "	.45
804	$\frac{3}{4}$ "	$\frac{7}{8}$ "	.30	811	$1\frac{1}{8}$ "	$1\frac{1}{4}$ "	.45
806	$\frac{13}{16}$ "	$\frac{15}{16}$ "	.45				

No. 813 Mandrel— $\frac{5}{8}$ " to fit first 6 sizes	.75
No. 814 Mandrel— $\frac{7}{8}$ " to fit last 7 sizes	1.00
No. 818 Bushing Driver Set, 13 sizes, 2 Mandrels in Metal Case	7.40

## Heavy Duty Bushing Drivers

The popularity of the No. 818 oTc Bushing Set and the many demands from Truck and Tractor service men have convinced us of the need for a larger Bushing Driver Set.

For use on connecting rod bushings, pins, steering sector bushings, King pin bushings and the many other bushings found on heavy equipment.

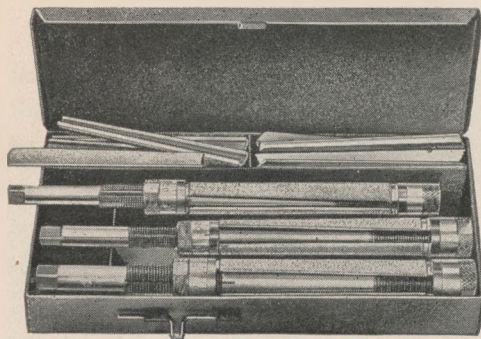
The set consists of 6 step collars with a driving mandrel to fit.

Item No.	Bushing I. D.	Bushing O. D.	Price	Item No.	Bushing I. D.	Bushing O. D.	Price
T-806	$1\frac{1}{16}$ "	$1\frac{1}{8}$ "	\$0.45	T-809	$1\frac{3}{8}$ "	$1\frac{5}{8}$ "	\$0.50
T-807	$1\frac{1}{4}$ "	$1\frac{1}{2}$ "	.45	T-810	$1\frac{7}{8}$ "	$1\frac{15}{16}$ "	.50
T-808	$1\frac{9}{16}$ "	$1\frac{11}{16}$ "	.50	T-811	$1\frac{1}{2}$ "	$1\frac{3}{4}$ "	.55

No. 815—Mandrel, $1\frac{1}{8}$ " to fit	1.25
No. T-818—Bushing Set in metal case	4.90



## Abrasive Pin Hone Set



An abrasive Hone that is both economical and satisfactory. Built particularly for fitting piston pins, enlarging spring eye and spindle bushings, steering knuckle, shackle bolt or front axle bushings. Can also be used to round or true up holes in aluminum, bronze, steel, cast iron or alloys.

Having a micrometer adjustment for expansion or contraction these hones give

splendid results by hand or by use in a lathe, drill press or reaming machine. When used in a machine it should not travel faster than 150 RPM and kerosene must be used freely on the abrasive.

This set has a range of .730" to 1.115". Each tool has an expansion of  $\frac{1}{8}$ " with blades resting solidly in the grooves and  $\frac{1}{16}$ " more with a set of shims under the blades.

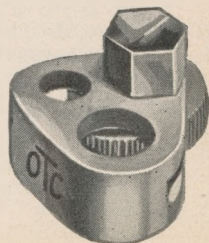
Set above is equipped complete with three Hones, 9 refills (3 sets), one set of 3 shims and one set of 3 burnishers in Metal Case.

No. 2450—Pin Hone Set Complete in Metal Case .....	\$11.90
No. 2455—Hone .730" to $\frac{7}{8}$ " .....	3.00
No. 2456—Hone $\frac{7}{8}$ " to 1" .....	3.25
No. 2457—Hone .990" to 1.115" .....	3.50
Extra Abrasives, per dozen .....	1.25
1 Set 3 Burnishers .....	2.00
1 Set 3 Shims .....	.25
No. 2495—Metal Box .....	1.25

## oTc Super Stud Bolt Wrench

A combination Stud Wrench with an exceptionally wide range. Takes any Stud from  $\frac{1}{8}$ " to  $\frac{3}{4}$ " easily and efficiently. Small enough to get into tough places, yet big and strong enough to pull the large size Stud Bolts. The Body of this tool is drop forged and heat treated to withstand severe usage. Hexagon Adaptor permits use of either a  $\frac{3}{4}$ " opening Box Wrench or Socket.

No. 843—Super Stud Bolt Wrench .....	\$2.65
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## oTc Super Pilot Reamer



Seven blades cutting at an angle assure a smooth, shearing cut with no possibility of chatter.

The long, fixed pilot, is part of the reamer body and is carefully machined and ground, assuring perfect alignment.

The double end taper guide, one end of which is recessed to permit end of blades to enter guide, permits of reaming both long and short bushings accurately, and in Piston Pin and King Bolt work reams both holes in perfect alignment.

Item No.	Size	Price	Item No.	Size	Price
R1416	$\frac{1}{16}$ " to $\frac{1}{2}$ "	\$4.50	R3032	$\frac{15}{16}$ " to 1"	\$7.00
R1618	$\frac{1}{2}$ " to $\frac{1}{8}$ "	5.60	R3234	1" to $1\frac{1}{8}$ "	7.50
R1820	$\frac{3}{8}$ " to $\frac{5}{8}$ "	5.75	R3436	$1\frac{1}{8}$ " to $1\frac{1}{4}$ "	7.75
R2022	$\frac{5}{8}$ " to $1\frac{1}{8}$ "	5.90	R3640	$1\frac{1}{4}$ " to $1\frac{3}{4}$ "	8.35
R2224	$1\frac{1}{8}$ " to $\frac{3}{4}$ "	6.05	R4044	$1\frac{3}{4}$ " to $1\frac{3}{8}$ "	8.65
R2426	$\frac{3}{4}$ " to $1\frac{3}{8}$ "	6.20	R4448	$1\frac{3}{8}$ " to $1\frac{1}{2}$ "	9.20
R2628	$1\frac{3}{8}$ " to $\frac{7}{8}$ "	6.35	R4852	$1\frac{1}{2}$ " to $1\frac{5}{8}$ "	9.85
R2830	.860 to $1\frac{1}{8}$ "	6.50			

## Solid Type Reamers King Pin Reamers



Properly ground to close limits these reamers are accurate, economical and satisfactory. Milled flutes on the front end assure proper centering and also remove burrs and excess metal in mouth of the opening.

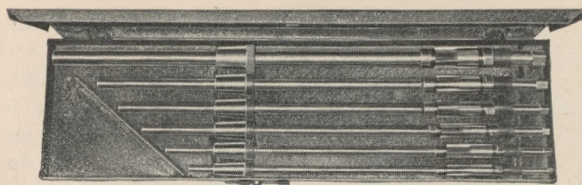
No.	To Fit	Size	Price
R-68	A, B and V8 Cars	.8135"	\$2.75
R-69	AA, BB and V8 Ford Trucks	1.0045"	3.25
R-71	1938-39 Ford $1\frac{1}{2}$ " Ton Trucks	1.130"	3.25
R-74	1936 Chevrolet Bushing type & 1937, 1938 Knee Action Models	.867"	3.00
R-75	Chev. Cars except knee action also Plymouth 1933 PC & PD & 1934 PF & PG models	.7353"	2.75
R-83	Chev. & Pontiac 1934, '35 and '36 Knee Action	1.0688"	3.65
R-82	All Chevrolet 6 Trucks	.922"	3.25
R-84	Plymouth 1934 PE, 1935, '36, '37 and '38 Models	.7965"	2.75

### Steering Sector Reamers

R-63	Ford V8 $1\frac{1}{2}$ " Ton Truck 1932 to 1938 inclusive	1.251"	4.00
R-64	Ford A, AA, B, BB & V8 Cars & Trucks (except V8 $1\frac{1}{2}$ " Ton) Master Chevrolet 1935 to 1938 and 1936-'38 Trucks	1.126"	3.75
R-66A	Standard Chevrolet 1931-36, 1933-34 Master and 1931 to 1934 Trucks	1.0005"	3.50
R-87	Standard Chevrolet Car 1933-35 inclusive	.876"	3.00



## Extra Long Aligning Reamers

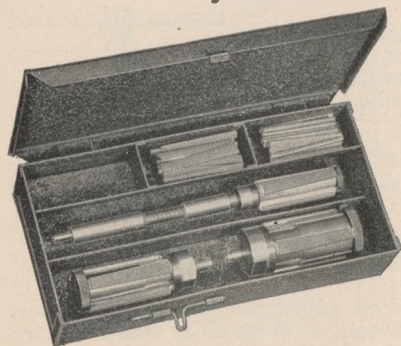


oTc Extra Long Reamers are designed for the purpose of reaming two holes in perfect alignment. They are especially practical on Electric Motor bearings. By putting the motor bells in place on the motor frame and reaming the bearing in this manner, a true running armature with a high percentage of bearing surface is assured.

No.	Size	Length	Price	No.	Size	Length	Price
LR-1618	$\frac{1}{2}$ " x $\frac{1}{8}$ "	15"	\$6.00	LR-2527	$\frac{3}{32}$ " x $\frac{3}{32}$ "	19"	\$7.25
LR-1820	$\frac{1}{4}$ " x $\frac{5}{8}$ "	15"	6.25	LR-2628	$\frac{1}{8}$ " x $\frac{7}{8}$ "	19"	7.25
LR-2022	$\frac{5}{8}$ " x $\frac{1}{8}$ "	16"	6.50	LR-2830	$\frac{7}{8}$ " x $\frac{1}{8}$ "	19"	7.50
LR-2123	$\frac{3}{32}$ " x $\frac{3}{32}$ "	16"	6.50	LR-3032	$\frac{1}{8}$ " x 1"	20"	7.75
LR-2224	$\frac{1}{8}$ " x $\frac{3}{4}$ "	17"	6.75	LR-3234	1" x $1\frac{1}{8}$ "	21"	8.00
LR-2426	$\frac{3}{4}$ " x $\frac{1}{8}$ "	18"	7.00				

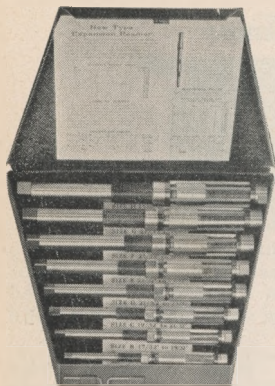
The set as illustrated above includes the following reamers; Nos. LR-1618, LR-2022, LR-2224, LR-2426, LR-2628 and LR-3234.  
 No. LR-12 Set of 6 Reamers as above ..... \$41.50

## Hydraulic Brake Cylinder Hone



A compact set that handles the Hydraulic Brake Cylinders on most of the popular makes of cars on the market. It has a range from  $\frac{3}{4}$ " to  $1\frac{1}{8}$ ". The set as illustrated includes 3 bodies, 3 sets of 3 blades (small, medium and large), with abrasives mounted, 18 extra abrasives, a special 1" cup screw to be used on the medium sized hone when honing step bore cylinders, and a flexible driving shaft.

No. 2465 Brake Cylinder Hone $\frac{3}{4}$ " to $1\frac{1}{8}$ "	\$ 2.40
No. 2466 Brake Cylinder Hone $1\frac{1}{8}$ " to $1\frac{1}{2}$ "	3.25
No. 2467 Brake Cylinder Hone $1\frac{1}{2}$ " to $1\frac{3}{4}$ "	3.15
No. 2460 Brake Cylinder Hone Set complete	14.80
Extra Abrasives (course or fine) per Doz.	1.10



## Midget Expansion Reamers

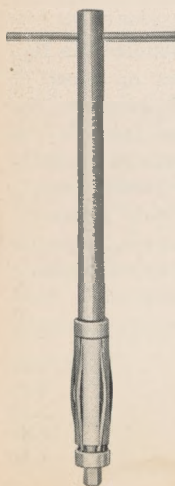
A complete set of midget reamers built especially for use on small motor bearings, as adjustable valve guide reamers etc. The set illustrated has a range from  $\frac{1}{4}$ " to  $\frac{15}{16}$ " and is enclosed in a neat metal case. Extension Shanks to adapt these reamers to Valve Guide work are available.

When ordering Extension Shanks specify the reamers on which they are to be used.

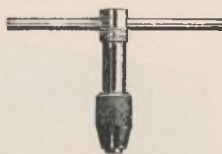
No.	Size	Length	Price	No.	Size	Length	Price
R-8	$\frac{1}{4}$ " to $\frac{9}{32}$ "	3 $\frac{1}{2}$ "	\$2.70	R-12	$\frac{3}{8}$ " to $\frac{13}{16}$ "	4 $\frac{1}{2}$ "	\$2.70
R-9	$\frac{9}{32}$ " to $\frac{5}{16}$ "	3 $\frac{3}{4}$ "	2.70	R-13	$\frac{13}{16}$ " to $\frac{7}{8}$ "	4 $\frac{3}{4}$ "	2.70
R-10	$\frac{5}{16}$ " to $\frac{11}{16}$ "	4 "	2.70	R-14	$\frac{7}{8}$ " to $\frac{15}{16}$ "	5 "	2.70
R-11	$\frac{11}{16}$ " to $\frac{3}{8}$ "	4 $\frac{1}{4}$ "	2.70				

No. R-25 Midget Reamer Set as illustrated .....	\$18.90
All Sizes of Extension Shanks (each) .....	.60

## Tee Handle Tap Wrenches



In addition to their use for driving taps, these wrenches are ideal for use with the Midget reamers listed above. Nos. 2250 and 2251 handle the entire set of reamers above.



No. 2250 Tap Wrench	$\frac{3}{16}$ " to $\frac{1}{8}$ "	.. \$ .50
No. 2251 Tap Wrench	$\frac{1}{16}$ " to $\frac{3}{16}$ "	.. .75
No. 2252 Tap Wrench	$\frac{9}{32}$ " to $\frac{1}{2}$ "	.. 1.00

## Expanding Valve Guide Cleaners

A set of three expanding, adjustable valve guide cleaners with a range that handles all of the popular makes of cars. The spring steel blades are hardened to cut quickly and can be reversed and turned when edges become dull.

No. V-21 Cleaner	$\frac{5}{16}$ " to $\frac{1}{8}$ "	.....\$ .75
No. V-22 Cleaner	$\frac{1}{8}$ " to $\frac{3}{4}$ "	..... 1.00
No. V-23 Cleaner	$\frac{11}{16}$ " to $1\frac{3}{4}$ " (Ford)	..... 1.25



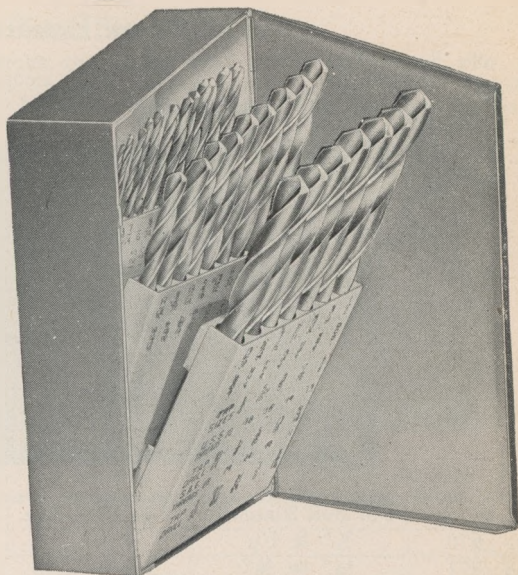
## \*Drill Indexes

Like a card index these cases have a place for each size drill marked with size and decimal equivalent. Each drill is right at your finger-tip and at the same time these cases are compact and take up very little space. Accurately built for use as a drill gauge and can be carried in any tool box. Substantially built for life time service.

Prices below do not include drills.

No. 013—For  $\frac{1}{16}$ " to  $\frac{1}{4}$ " .....\$1.10

No. 029—For  $\frac{1}{16}$ " to  $\frac{1}{2}$ " ..... 3.00



## \*oTc Twist Drills

Diameter		Price		Diameter		Price	
Inches	Length	Carbon	Hi Speed	Inches	Length	Carbon	Hi Speed
$\frac{1}{16}$ "	2 $\frac{1}{2}$ "	\$0.15	\$0.25	$\frac{1}{8}$ "	4 $\frac{3}{8}$ "	\$0.30	\$0.80
$\frac{5}{64}$ "	2 $\frac{5}{8}$ "	.15	.25	$\frac{1}{8}$ "	4 $\frac{1}{2}$ "	.35	.85
$\frac{3}{32}$ "	2 $\frac{3}{4}$ "	.15	.25	$\frac{3}{16}$ "	4 $\frac{5}{8}$ "	.35	.95
$\frac{7}{64}$ "	2 $\frac{7}{8}$ "	.15	.30	$\frac{3}{16}$ "	4 $\frac{3}{4}$ "	.35	1.00
$\frac{1}{8}$ "	3 "	.15	.35	$\frac{3}{16}$ "	4 $\frac{7}{8}$ "	.40	1.10
$\frac{9}{64}$ "	3 $\frac{1}{8}$ "	.15	.35	$\frac{3}{8}$ "	5 "	.40	1.20
$\frac{5}{32}$ "	3 $\frac{1}{4}$ "	.20	.40	$\frac{3}{8}$ "	5 $\frac{1}{8}$ "	.45	1.30
$\frac{11}{64}$ "	3 $\frac{3}{8}$ "	.20	.40	$\frac{1}{2}$ "	5 $\frac{1}{4}$ "	.45	1.45
$\frac{3}{16}$ "	3 $\frac{1}{2}$ "	.20	.45	$\frac{1}{2}$ "	5 $\frac{3}{8}$ "	.55	1.55
$\frac{13}{64}$ "	3 $\frac{5}{8}$ "	.20	.50	$\frac{1}{2}$ "	5 $\frac{1}{2}$ "	.60	1.60
$\frac{7}{32}$ "	3 $\frac{3}{4}$ "	.25	.50	$\frac{1}{2}$ "	5 $\frac{7}{8}$ "	.65	1.75
$\frac{15}{64}$ "	3 $\frac{7}{8}$ "	.25	.55	$\frac{1}{2}$ "	5 $\frac{3}{4}$ "	.70	1.85
$\frac{1}{4}$ "	4 "	.25	.60	$\frac{1}{2}$ "	5 $\frac{1}{2}$ "	.75	2.00
$\frac{17}{64}$ "	4 $\frac{1}{8}$ "	.25	.65	$\frac{1}{2}$ "	6 "	.80	2.20
$\frac{9}{32}$ "	4 $\frac{1}{4}$ "	.30	.70	Set-29	Drills	10.10	26.10

Complete Set of 29 Hi-Speed Drills in Index .....\$29.10

Complete Set of 29 Carbon Drills in Index ..... 13.10

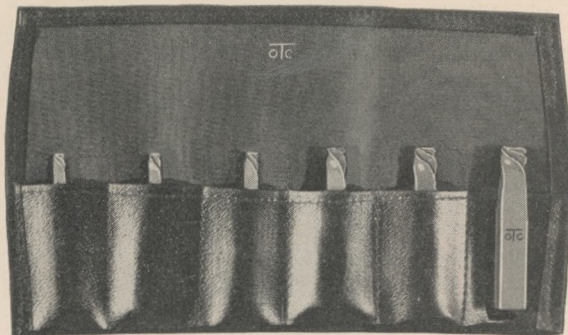
Set of 13 Hi-Speed Drills  $\frac{1}{16}$ " to  $\frac{1}{4}$ " in Index ..... 6.25

Set of 13 Carbon Drills  $\frac{1}{16}$ " to  $\frac{1}{4}$ " in Index ..... 3.55



## oTc Screw Extractors

oTc Screw Extractors have been very successful. They are extremely tough and practically unbreakable. Made of Chrome-Vanadium, heat treated and guaranteed. Plated finish.



Size No.	For Bolt Diameter	Use Drill Size	Drill Depth	Price
870	$\frac{5}{8}$ " & Up	$\frac{7}{16}$ "	$\frac{5}{16}$ "	\$0.50
871	$\frac{1}{2}$ " to $\frac{5}{8}$ "	$\frac{3}{8}$ "	$\frac{1}{8}$ "	.50
872	$\frac{7}{8}$ " to $\frac{1}{2}$ "	$\frac{5}{16}$ "	$\frac{1}{4}$ "	.50
873	$\frac{3}{8}$ " to $\frac{7}{8}$ "	$\frac{1}{4}$ "	$\frac{1}{4}$ "	.50
874	$\frac{1}{8}$ " to $\frac{3}{8}$ "	$\frac{3}{16}$ "	$\frac{3}{16}$ "	.50
875	$\frac{1}{4}$ " to $\frac{1}{8}$ "	$\frac{5}{32}$ "	$\frac{3}{16}$ "	.50

No. 876—Set of 4—872, 873, 874, 875 in Kit	\$2.00
No. 877—Set of 6. All Sizes in Kit	3.00
No. 877-A—Set of 6 with Hi-Speed Drills to Match	8.10
No. 877-B—Set of 6 with Carbon Drills to Match	5.00
No. 873—Is the size for Alemite fittings.	

## Improved Valve Lock Replacer

No. 851-A



Easy to load and operate, this new tool gets into tight places to replace split valve locks on practically all makes of cars and trucks. It holds the split locks firmly until they are placed in position and the valve spring is lowered.

This tool should be used with the No. A-100 Stubby Valve Lifter illustrated on page 115 for best results. Complete instructions for operating are furnished with each tool.

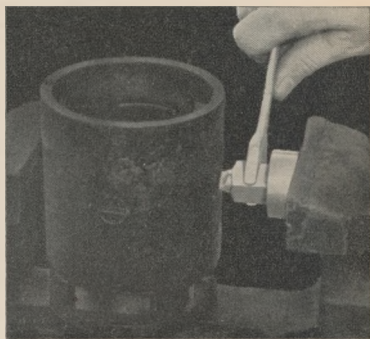
No. 851-A—IMPROVED VALVE LOCK REPLACER	\$1.95
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## Pole Piece Screw Driver

A new Screw Driver designed particularly to remove and replace pole pieces in Generators and Starters. This tool is a necessity in shops specializing in electrical service as well as in general service shops doing electrical work.

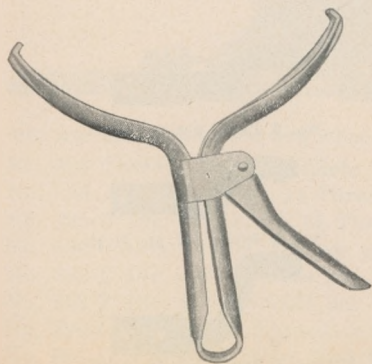
The screws holding the pole piece in place are usually driven in so tight it is impossible to remove them with an ordinary screw driver. This new screw driver simplifies the job, making it comparatively easy. Directions for use: Place generator or starter in large vise. Insert screw driver bit in screw slot. Apply pressure with vise to hold bit in position. Turn screw driver bit with wrench applied to the square section of the bit. It is not necessary to ease the vise pressure as the pole piece moves inwardly off the screw when it is loosened.



No. 979—Pole Piece Screw Driver .....	\$1.25
No. 480— $\frac{3}{8}$ " Ford Pole Piece Screw Driver .....	1.25
No. 481— $\frac{1}{2}$ " Ford Pole Piece Screw Driver .....	1.25

## Crankshaft Turner

No. 964  
Patented



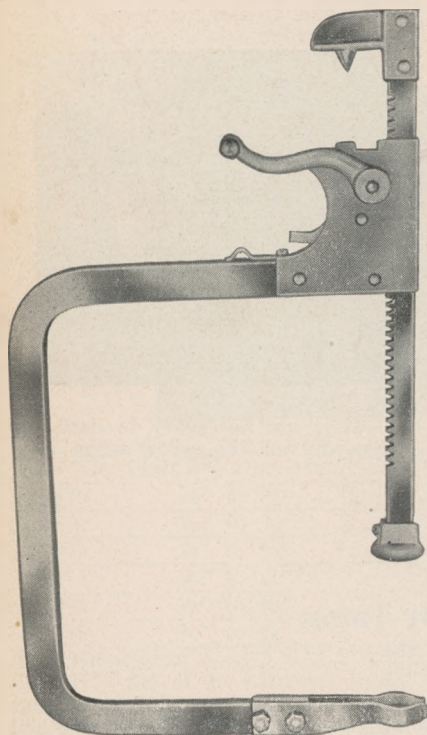
Another new development by oTc that provides a simple and efficient method for turning the motor over while the operator is working underneath the car.

By clamping this tool onto the starter teeth on the flywheel the motor can be turned in either direction quickly and easily. Freedom of operation is possible with this tool because it can quickly be taken off and replaced in a new position. It positively will not slip off or damage the bearing surfaces of the crankshaft. It provides sufficient leverage to turn the crankshaft easily.

Works on all Chrysler and General Motors cars. Also late Fords.

No. 964—Crankshaft Turner .....	\$2.50
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## Little Wonder Valve Lifters



The Little Wonder Valve Lifter has long been recognized as the most universal of the C type lifters. It is adaptable to practically all makes of cars and does a very satisfactory job. It has a positive vertical lift and a positive automatic lock which locks at any desired position. The handle is fitted with a ratcheting device to permit clearing obstructions. The frame provides sufficient clearance which makes the removal of the exhaust manifold unnecessary. This tool is also provided with a recompression arrangement which permits easy and quick compression of the Valve Springs. Each lifter comes complete with one set of straight spring jaws (as illustrated) and a set of three spring holders.

No. A-200—Lifter 11" x 11"  
Frame .....\$6.50

No. B-300—Lifter, Truck &  
Tractor Special, 11" x 13"  
Frame ..... 8.50

Additional jaws may be purchased to give these lifters a wider application. These jaws are interchangeable on either the Standard A-200 or the Heavy Duty B-300 Lifter. Exceptionally useful where motors have low block clearance at valve cover plate.



No. 2 Jaws, per pr. \$1.00



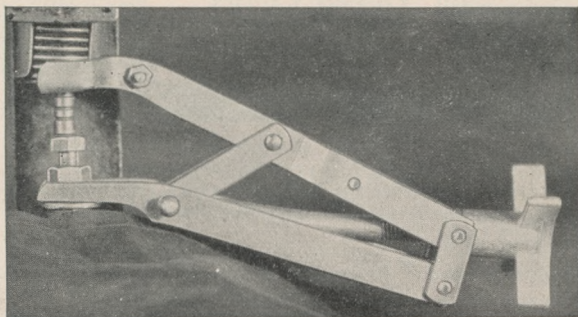
No. 3 Jaws, per pr. \$1.25



No. 5 Jaws, per pr. \$1.25



## Stubby Valve Lifter

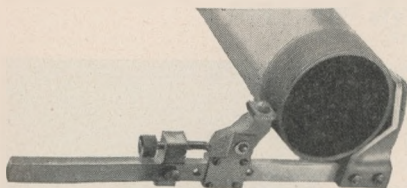


A new type valve lifter of extremely practical design. Short and compact to permit operation in tight places around manifolds, carburetors, fuel lines, fuel pumps, tappet lid studs, etc.

One of the most universal tools of this kind made, it will work on all Chrysler built products from 1933 to 1940, Oldsmobile, LaSalle, Pontiac, Reo, International 4 and 6 cylinder truck L-head motors, Auburn and many others. Guaranteed lifting pressure, 300 pounds.

No. A-100—Stubby Valve Lifter .....\$1.85

## Outside Thread Chaser

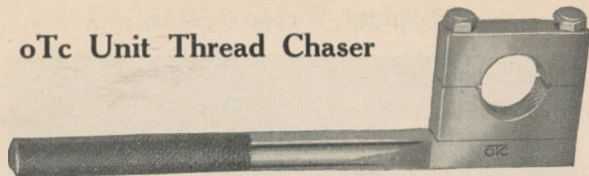


Designed to restore damaged and battered threads on any outside diameter from 1" to 5". The tool is operated by applying it on the good threads and backing off over the damaged threads. Pressure should be increased on each succeeding cut until threads are restored.

Brass pad or individual chaser dies are not guaranteed and when worn can be purchased at a nominal price.

No. 896 Thread Chase, complete with 6 chaser dies .....	\$ 9.00
No. 896-A Die, 8, 10, 12, 14 Threads per inch .....	1.00
No. 896-B Die, 16, 18, 20, 24 Threads per inch .....	1.00
No. 896-C Die, 8, 11½ Threads per inch .....	.50
No. 896-E Die, 4, 5 Threads per inch .....	.50
No. 896-F Die, 6, 7 Threads per inch .....	.50
No. 896-G Die, 7½, 9 Threads per inch .....	.50
No. 896-D V-shaped Brass Pad (only) .....	1.50

## oTc Unit Thread Chaser



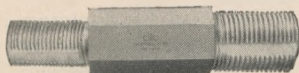
An extremely practical tool for straightening and restoring battered or damaged threads on axle shafts, axle housings, drive shafts, cam shafts, etc. Dies are interchangeable on handles. Only one handle is required for first eleven sizes and one handle for last five sizes. Table below gives prices of CHASER DIES Only.

Item No.	Size & Thread	Price	Item No.	Size & Thread	Price
TC-20	$\frac{5}{8}$ "-18	\$1.10	TC-40	1 $\frac{1}{4}$ "-12	\$1.10
TC-24	$\frac{3}{4}$ "-16	1.10	TC-41	1 $\frac{1}{4}$ "- 7	1.10
TC-25	$\frac{3}{4}$ "-20	1.10	TC-48	1 $\frac{1}{2}$ "-12	1.10
TC-26	1 $\frac{1}{8}$ "-16	1.10	TC-68	2 $\frac{1}{8}$ "-16 Chev. Truck	3.75
TC-28	$\frac{7}{8}$ "-14	1.10	TC-72	2 $\frac{1}{4}$ "-16 Ford Truck	3.75
TC-29	$\frac{7}{8}$ "-18	1.10	TC-73	2 $\frac{1}{4}$ "-12 Int. Truck	3.75
TC-32	1"-14	1.10	TC-76	2 $\frac{3}{8}$ "-12 Cat. Tractor	3.75
TC-36	1 $\frac{1}{8}$ "-12	1.10	TC-80	2 $\frac{1}{2}$ "-12 Int. Truck	3.75

No. TC-10—Handle for first 11 sizes, 10" long .....\$0.60  
 No. TC-18—Handle for last 5 sizes, 18" long ..... 1.50

## Spark Plug Hole Thread Chaser

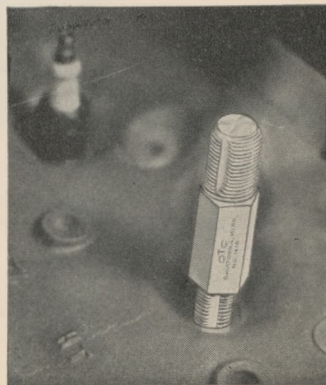
No. 1418



A 14 millimeter chaser on one end and an 18 millimeter chaser on the other provides the two most popular sizes used on a majority of cars. With the growing popularity and use of aluminum cylinder heads it becomes increasingly easy to strip or cross the threads when replacing spark plugs.

The new oTc tool is essentially a thread chaser and cannot be used to cut threads. It will clean out a crossed or damaged spark plug thread quickly and easily and will be found to be a very useful piece of equipment in any shop.

No. 1418—Spark Plug Thread Chaser \$1.25

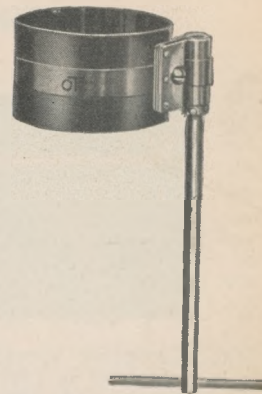


## oTc Ring Compressors

Built of Swedish Blue Spring Steel and designed to handle all pistons from 2  $\frac{1}{2}$ " to 7". Compression tape is made from a very tough grade of Swedish Steel and is tempered to give long service. The flare on the edge of the tool prevents it from entering the cylinder when piston is pushed down.

Furnished in two sizes. No. 868 for passenger cars and No. 868-T for Trucks and Tractors.

No. 868—Capacity 2  $\frac{1}{2}$ " to 5" .....\$1.10  
 No. 868-T—Capacity 3  $\frac{1}{2}$ " to 7" ..... 1.50  
 Extra Tape for No. 868 ..... .25  
 Extra Tape for No. 868-T ..... .35

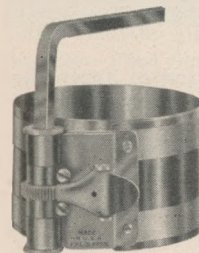


## Ratchet Ring Compressor

The new type Ratchet Ring Compressor holds the tension at the desired point. Pressure is relieved by releasing the Ratchet pawl. An automatic friction brake is controlled by two screws on either side of the ratchet pawl.

Furnished in two sizes, one for cars and the other for trucks and tractors.

No. 849 Compressor 2  $\frac{1}{2}$ " to 5" .....\$2.00  
 No. 849-T Compressor 3  $\frac{1}{2}$ " to 7" ..... 2.50



## Improved Ring Compressor

No. 869

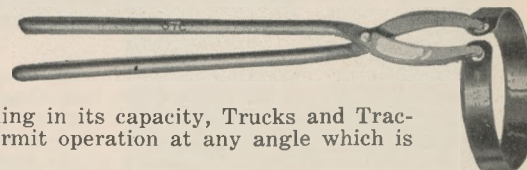
This new oTc Ring Compressor is designed to cover a wider range of work than ever; including in its capacity, Trucks and Tractors. It is designed to permit operation at any angle which is a decided advantage.

It comes equipped with 6 bands of different lengths to handle various sizes of pistons. Bands are of strong flexible metal which shapes itself readily to the contour of the piston. The tongs are of drop-forged Chrome-Vanadium steel.

No. 869—Compressor, complete with 6 bands .....\$2.75

### BAND SIZES

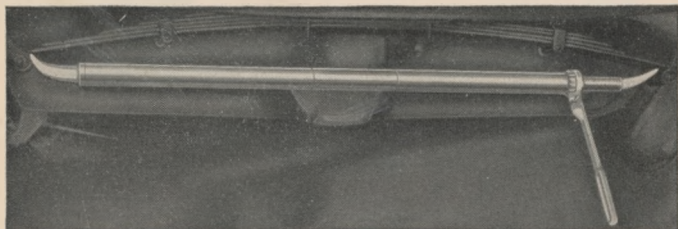
No.	Size	Price	No.	Size	Price
869-A	2 $\frac{1}{8}$ " to 3 "	\$0.25	869-D	3 $\frac{5}{8}$ " to 3 $\frac{1}{2}$ "	\$0.25
869-B	3 " to 3 $\frac{1}{8}$ "	.25	869-E	3 $\frac{1}{8}$ " to 4 $\frac{1}{4}$ "	.25
869-C	3 $\frac{1}{8}$ " to 3 $\frac{3}{8}$ "	.25	869-F	4 $\frac{1}{4}$ " to 4 $\frac{3}{8}$ "	.25





## Universal Ford Spring Spreader

No. 450



The oTc Spring Spreader is a Universal Tool which works on all model Fords from 1928 to 1941 inclusive. It is made up of varied length extensions which provide the exact expansion necessary to remove or replace front as well as rear springs on the above cars in an equally efficient manner.

The ratcheting action, which can be reversed at will, used to apply the force is fast and easy of operation. The ratchet handle provides sufficient leverage and no extensions are necessary.

The body of the tool is built from seamless steel tubing which will not warp or bend under pressure. The ratchet handle is drop-forged and will give long service.

No. 450 Universal Ford Spring Spreader complete .....\$12.50

## V8 Shackle Punches



These punches are essential for use in replacing all size Rubber Shackles where close quarters do not permit the new shackle to be pulled into position. With these punches it is possible to drive the shackle into place without the possibility of splitting the case. They conform to the contour of the shackle and are sized to fit. Works on all V8 Models.

No. 447—V8 Shackle Punch for  $\frac{3}{4}$ " Shackles 18" long .....\$2.50  
 No. 448—V8 Shackle Punch for  $\frac{7}{8}$ " Shackles 18" long ..... 2.50  
 No. 449—V8 Truck Front Spring Shackle Punch  $1\frac{1}{8}$ " 8" long ..... 1.50

## Rubber Shackle Sleeves

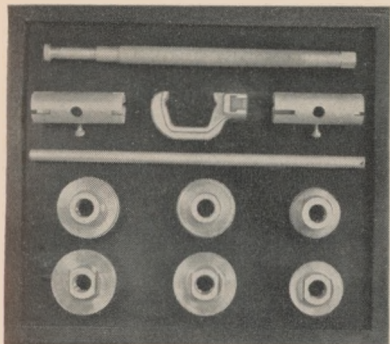
Sleeves are provided to place over the shackle to prevent the shackle from swelling when driving them into position. Should be used with shackle punches. Made from seamless steel tubing and reamed to size.

No. 422-C— $\frac{7}{8}$ " Shackle Sleeve .....\$0.40  
 No. 422-D— $\frac{3}{4}$ " Shackle Sleeve ..... .40



## Ford Sleeve Puller and Replacer

No. 490



The new oTc Ford Sleeve Puller and Replacer removes and replaces the cylinder sleeves on Ford Models 60, 85, 95 and Ford Ferguson Tractor.

This tool makes a simple routine job out of this otherwise difficult operation. Sleeves can be removed and replaced with the motor in the Chassis and the job done quickly. The set is made up of eleven pieces, all built of high grade alloy steel and heat-treated for long service.

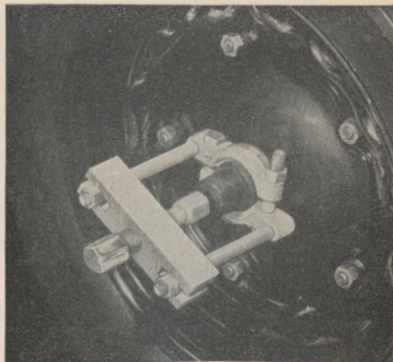
The set can be obtained mounted on an attractive display board if desired. Full instructions for operation is packed with each tool.

No. 490—Ford Sleeve Puller and Replacer complete, less board .....	\$24.00
No. 490-N—Sleeve Puller less Crankshaft Sockets and Bar .....	19.50
No. F—Display Board (only) .....	2.00

## Ford Hub Puller

The new oTc Ford Hub Puller is designed and built to pull Hubs on all Ford cars from 1928 to 1941. This tool furnishes an economical answer to the request for a medium priced unit tool for Ford Hubs alone. This Puller hooks onto the flange on the hub and the power applied with a substantial forcing screw. After drawing up the screw as far as possible a few staccato blows with a small hammer on the end of the forcing screw will provide the jar necessary to break the hub loose.

No. 474—Ford Hub Puller .....\$8.75



## Cotter Pin Puller

(Not Illustrated)

Designed to reach and pull cotter keys in inaccessible places where regular cotter key pliers or side cutters cannot be operated. Approximately 12" long and provided with a tee grip to enable the operator to insert the hook and with a twisting motion pull the cotter pin.

This tool is particularly effective when pulling the cotter pin on Ford brake rods.

No. 476—Cotter Pin Puller .....\$0.75

## Shock Absorber Link Separator

No. 462



Built to separate V8 Ford Shock Absorber links and Tie Rod joints by driving the wedge between the parts.

After removing the nut from the tapered bolt holding the Shock Absorber link, the wedge-shaped fork of this tool is placed between the Shock Absorber link and the shock arm. A few sharp blows on the end of the tool with a hammer forces the tapered bolt out of the shock arm quickly and easily.

Works on all models including 1941.

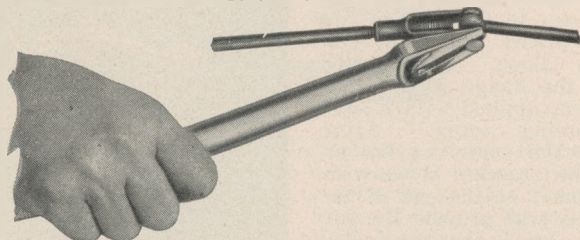
This tool is equally efficient when separating tie rod joints if used in a manner similar to that explained above.



Eighteen inches long, drop-forged and built for long service.  
No. 462—Shock Absorber Link Separator .....\$2.50

## Brake Rod Clevis Pin Puller

No. 461



Anyone who ever attempted to pull a clevis pin from the brake rod on Ford and other cars appreciates the need for this tool. These pins are located where they become rusted and corroded quickly and with ordinary tools it is almost impossible to remove them. In addition they are inaccessible so that a punch and hammer cannot easily be employed, and the brake rod does not furnish sufficient support for a solid blow.

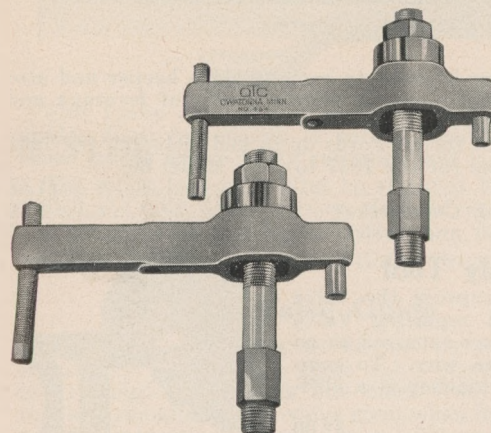
The wedge fork of this tool is forced behind the head of the clevis pin and the pin pulled in this manner. It will pull any clevis pin of  $\frac{1}{8}$ " diameter.

It is drop-forged from high grade steel and heat-treated throughout. The length of which is sufficient to operate it with ease. Works on late model Fords.

No. 461—Brake Rod Clevis Pin Wedge .....\$1.50

## Ford Cylinder Head Puller

No. 484



This new **OTC** tool licks one of the most difficult jobs found in the Ford service shop. Ford cylinder heads become corroded and rusted onto the stud bolts and often times parts are damaged and time lost trying to remove them. This new **OTC** tool saves money in parts and labor because it removes a Ford head quickly and easily without damage to any of the parts.

It consists of two drop-forged blocks each equipped with two studs, pulling screw, washer and nut to permit pulling on each end of the head simultaneously. The pulling screws are

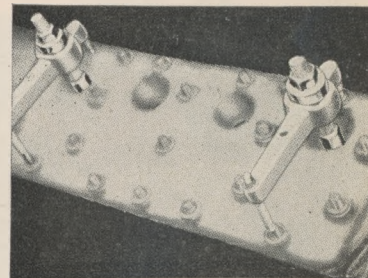
screwed into the spark plug holes on each end of the cylinder head. The small studs rest on top of the cylinder head studs and are easily adjusted to level-up the puller. The force is applied with a wrench used on the pulling screw nut.

Two extra pulling screws with 14 MM threaded ends are available to make this tool work on V8 model 60 Fords, and late model 85's.

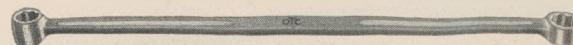
No. 484—Ford Cylinder Head Puller for V8-85 and V8-60 .....\$8.00

Extra  $\frac{7}{8}$ "—18 Thread Screws for 1933-35 V8 Cars .....\$2.00

No. 991—Metal Box for above ..... 1.25



## OTC Ford Brake Wrench



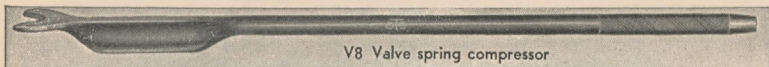
Double square or 8 point openings on both ends to efficiently service both car and truck. A tough wrench for a tough job. Works on all models including both 1938 Ford cars.  $\frac{1}{8}$ " and  $\frac{1}{2}$ "-8 point openings.

No. 420—Ford Brake Wrench .....\$1.50





## oTc V8 Valve Spring Compressor



V8 Valve spring compressor

Built to compress Valve spring in order to remove valve keeper and also to remove valve guide lock. 21½" long to permit plenty of leverage and works on all V8 Fords, including 1941.

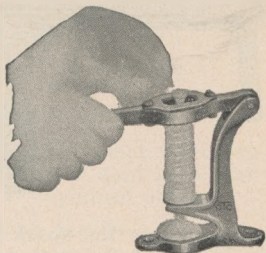
Furnished in two sizes, No. 413 for all Fords up to and including the 1941 Model 85, No. 463, a smaller size for the 1937 to 1940 Model 60.

No. 413—Spring Compressor .....	\$1.50
No. 463—Model 60 Valve Spring Compressor .....	1.50
No. V-421—Double-end for V-60 and V-85 .....	2.50

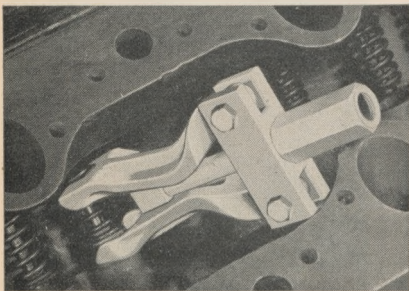
## V8 Valve Assembly Tool

Built as a bench tool to compress the valve spring to allow removing and replacing Valve Keeper. V8 Valve Assemblies are removed as an assembly and replaced the same way. To compress this spring in any other manner is a difficult operation.

No. 438—Valve Assembly Tool .....	\$2.00
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## Valve Assembly Remover



No. 455

Removes Ford Valve assemblies faster and easier than any other system yet devised. The tool is inserted straddling the valve stem, and the top half bearing against the bottom of the valve guide. With a lever action furnished by using a wrench on the long forcing nut the valve assembly is forced up and out.

This tool works on all V8 Fords including the 85 and 60 models, and Mercury cars.

No. 455—Improved Valve Assembly Remover .....	\$3.90
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## Valve Guide Lock Puller

No. 414



The quickest and easiest way of removing Ford Valve Guide Locks. The tapered end of the tool is hooked into the eye of the guide lock and with a quick prying action the locks can be pulled without driving the guides down.

No. 414—Ford Valve Guide Lock Puller .....	\$1.25
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## V8 Valve Guide Driver



This heavy duty Valve Guide Driver is built to drive the late model V8 guides down far enough to permit removing the guide lock. Often times these guides are so badly carboned that it is very difficult to move them.

The guide lock must first be removed before the valve assembly can be pulled and only with a strong, rigid driver can this be done.

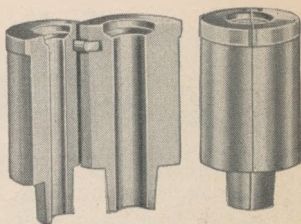
No. 411-V—V8 Valve Guide Driver .....	\$0.90
No. 468—V8 Model 60 Valve Guide Driver .....	.90

## V8 False Valve Guide

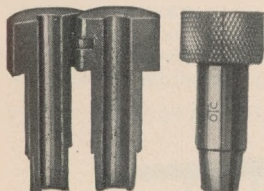
A False Guide made to fit the V8 Ford. Accurately machined to guide valve perfectly in grinding. Guide goes into block from the top, and remains on the valve stem when lifted out for inspection. Works on all V8 models including 1941 models.

Furnished in two sizes.

No. 409—Model 85 False Guide .....	\$1.25
No. 464—V8 Model 60 False Guide .....	1.25



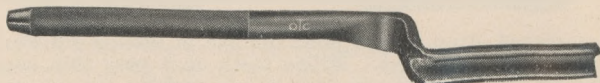
## oTc Model A False Valve Guide



A time saver on valve work. It lifts out with the valve as it is not put in from the bottom as the regular guides are. The two halves are held together with a coil spring which permits faster operation and prevents the loss or misplacing of parts. Accurately made and guaranteed to do the job. Works on Model B4 also.

No. 408—Model A False Guide .....	\$1.25
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## oTc Ford Valve Guide Punch



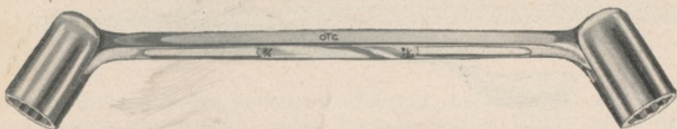
The oTc Ford Valve Guide Punches have proven to be the most practical tools of their kind on the market. Of rugged construction, simple design and easily operated they will do the job with a minimum of time and effort. Plated.

No. 411—Model V8 Valve Guide Punch, 1935-1936 .....	\$0.90
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## Special Ford Flex Wrench

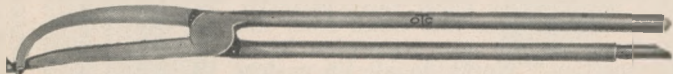


Combining the two sizes most generally used on Ford cars this wrench will handle a big percentage of all Ford nuts and bolts. Ford service men will find this to be one of the most popular wrenches they ever owned.

One end has a  $\frac{5}{8}$ " twelve point flex socket and the other end an  $\frac{11}{16}$ " twelve point socket. It is 12" long overall.

No. F-2022—Ford Special Flex Wrench .....\$2.15

## oTc No. 704 Brake Spring Plier



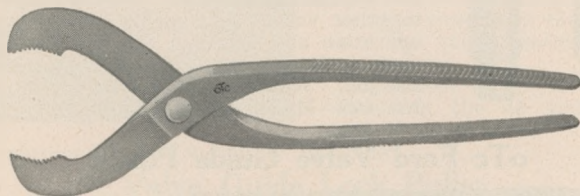
A tool that makes play out of removing and replacing brake springs. One end of handle machined to facilitate replacing springs.

Hand forged from high grade Alloy Steel and heat treated.

No. 704—Brake Spring Plier .....\$2.00

## V8 Con Rod Bearing Plier

No. 479

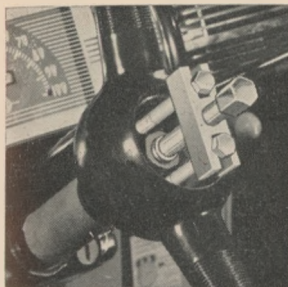


A newly designed, drop-forged plier for use in testing V8 Ford Connecting Rod bearings for looseness. Milled teeth on a very thin edge permit a positive grip on the bearing shoulder which enables the operator to turn the bearing easily.

This plier works equally well on Model 85 and Model 60 including 1939 models so it is not necessary to buy a plier for each model.

No. 479—V8 Con Rod Bearing Plier .....\$1.65

## Ford Steering Wheel Puller No. V-424



A new tool built for the purpose of removing late Model Ford Steering Wheels. Due to the addition of shifting lever on the steering column the conventional type of puller is not satisfactory on this job.

The puller is applied as illustrated. The horn button must first be removed. The horn wire is then disconnected and removed. Due to the limited space one cap screw of the tool should first be threaded into place. The tool can then be assembled as shown and the job done.

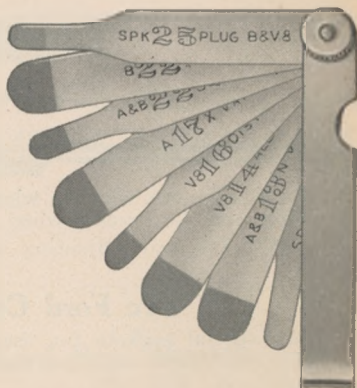
No. V-424—Ford Steering Wheel Puller \$1.50

## V8 Ford Go-No-Go Gauge No. 460

This thickness gauge is designed particularly for Ford mechanics and service men. It carries all the sizes necessary to test ignition and valve clearance on Fords from 1928 to 1940. Six of the 8 blades have the GO and NO—GO feature. Four Ignition blades, .035, .025, .022, .016 and four valve blades, .022, .017, .014, and .013 wire point, comprise the gauge.

A knurled thumb nut permits quick selection of the desired size which can be locked in position while in use.

No. 460—V8 Thickness Gauge .....\$1.10



## oTc Ford Piston Pin Inserter



A perfect tool for removing or replacing piston pins. Operation: Unscrew pilot end from handle, slip pin on shoulder of handle and screw pilot into handle, turning up tight. Pilot expands locking ring evenly. Made of alloy Steel and heat treated to give maximum service. An absolute necessity in every Ford Service Station. Plated finish.

No. 407—V8 Wrist Pin Inserter .....\$1.85





## oTc Ford King Pin Remover

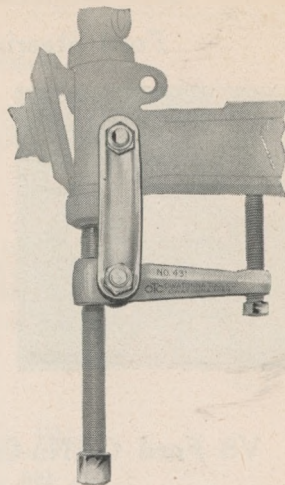
No. 431

The illustration shows the application of this tool to the job. Pulls the tightest king pins.

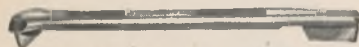
This tool is the most universal one built for this difficult job. It works on all Ford models and the thousands sold is proof of its popularity.

The block and straps are drop-forged for strength and long life. All parts built of high grade alloy steel.

No. 431—King Pin Pusher ..... \$5.00



## No. 833 Tie Rod Adjusting Tool



Built particularly for use on V8 Fords because of the limited space available for adjusting Tie Rods. When adjusting

Tie Rod on left side the wheels should be cramped as far to the right as possible and the reverse when adjusting right side Tie Rods.

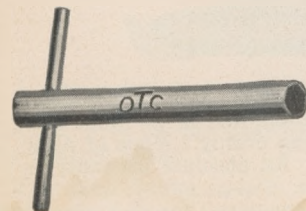
No. 833—Tie Rod Adjusting Tool ..... \$0.85

## oTc Ford Connecting Rod Sockets

Two special sockets for use on Ford connecting Rods. Both have 1/2" square connection and their use is limited to these jobs.

No. 423—1/8" For V8's ..... \$0.50

No. 121—3/16" For Model A and B ..... .55



## Ford Carburetor Jet Wrench and Remover

Two indispensable tools for every mechanic's tool kit. A jet wrench for the main metering jet on V8 models and an extractor for removing the broken portion of the discharge jet on the "EEL" type carburetor. Jet wrench is 2 1/4" long for late models.

No. 416—V8 Ford Jet Wrench ..... \$ .90

No. 417—V8 Jet Remover ..... .80

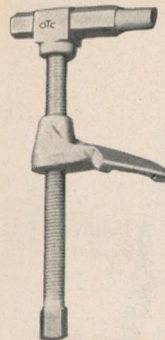


## V8 Motor Jack

In order to drop the Crank Case on late model Ford cars and trucks it is first necessary to raise the front end of the motor. The oTc Motor Jack simplifies this operation to such an extent that it may be done in one-half the usual time. Where a chain hoist is not available the Motor Jack is indispensable.

On the 1937 and 1938 Model horn brackets must first be removed to effectually use this tool.

No. 445—V8 Motor Jack ..... \$4.25



## oTc Ford Hub Bolt Punches



For upsetting the shoulder on all model Ford Hub Bolts. Made in two styles: The starter punch to do the preliminary upsetting, and the finishing punch to complete the job. Plated.

No. 402—Car Starter Punch 7/8" ..... \$1.25

No. 403—Car Finishing Punch 7/8" ..... 1.00

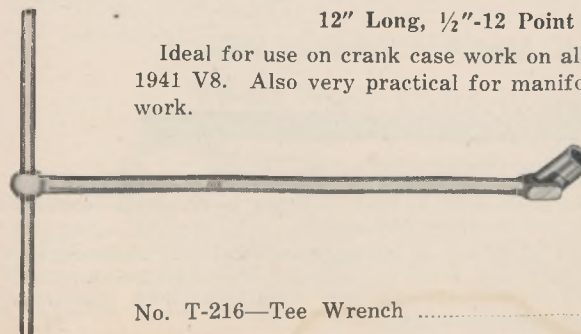
No. 404—Truck Starter Punch 1 1/8" ..... 1.50

No. 405—Truck Finishing Punch 1 1/8" ..... 1.25

## oTc No. T-216 Ford Pan Wrench

12" Long, 1/2"-12 Point Socket

Ideal for use on crank case work on all model Fords including 1941 V8. Also very practical for manifold and general purpose work.



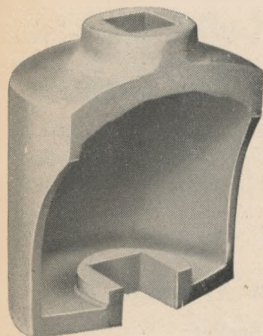
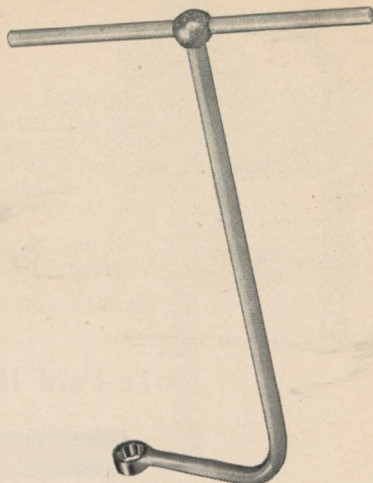
No. T-216—Tee Wrench ..... \$2.75

## V8 Shock Absorber Filler Plug Wrench

An offset Tee Wrench specially designed to remove and replace the filler Plug on late model Ford Shock Absorbers—an impossible operation without the proper tool. Works on all models from 1935 to 1940 inclusive.

No. 454—V8 Filler Plug Wrench

$\frac{7}{8}$ " opening .....\$1.45



## Ford Oil Gauge Wrench

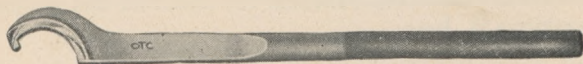
No. V-425

A fast operating wrench built to remove and replace the oil pressure gauge unit on all model Fords.

Used with an extension and a ratchet this wrench allows plenty of clearance to turn this part without removing the wrench. A real time saver that will be of interest to every Ford service man.

No. V-425—Ford Oil Gauge Wrench ..... \$1.85

## V8 Shock Absorber Spanner Wrench



The new type Ford Shock Absorbers are equipped with a packing nut which requires tightening from time to time in order to eliminate leakage. This packing nut also serves as an adjustment.

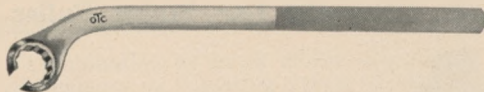
A wrench of this kind is necessary to properly service the new Shock Absorbers and every shop servicing Ford cars should have this service tool. All Ford cars from 1937 to 1939 are equipped with this Shock Absorber.

No. 453—Shock Absorber Spanner Wrench .....\$1.00





## Ford Vacuum Line Wrench



This single-end twelve point slotted wrench is built to tighten and remove the brass nuts found on Ford distributor vacuum lines. The slotted end permits applying the wrench over the tubing and the 12 point opening eliminates the danger of rounding off the corners of the soft brass nuts.

No. 466—Vacuum Line Wrench for Model 60, 85 and Pickup .....\$0.90

## O.T.C. Ford Tie Rod Socket

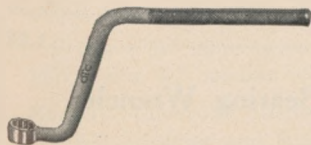
$\frac{3}{8}$ " Square Connection

When used with O.T.C. Junior Socket Handles, it makes adjustments on shock absorbers and tie rods quickly and easily.  $\frac{3}{4}$ " bit works on all models. Plated.

No. 227—Ford Tie Rod Socket .....\$0.50



## Lincoln-Zephyr Distributor Wrench



A double offset single end box wrench with a  $\frac{1}{2}$ " opening built to remove and replace the distributor on 1937-'40 Fords and 1936 and 1937-'41 Lincoln Zephyr cars.

Without a wrench of this kind it is almost impossible to do this job in a satisfactory manner. The increasing popularity of this new car demands that Ford shops be equipped with the proper tools to service it. Works also on 1937 Lincoln-Zephyr water pump.

This wrench is essential in every Ford Service Shop.

No. Z-451—Lincoln-Zephyr Distributor Wrench .....\$1.10

## V8-60 Water Pump Wrench



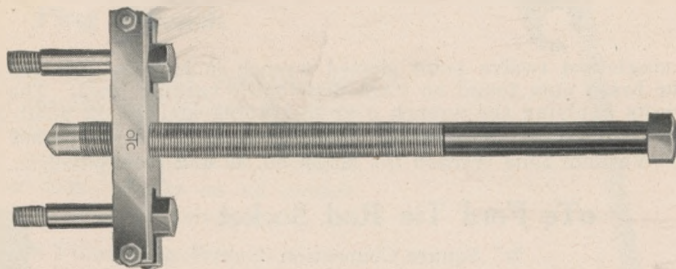
A Spanner Wrench of this kind is necessary to tighten the Water Pump packing on the 1937-38-V8 Model 60 Ford. Built accurately to size, 11" long and guaranteed for long service.

No. 452—V8 Model 60 Water Pump Spanner Wrench .....\$1.00

No. V-412—1940 Model 60 Pump Wrench ..... 1.00

## CHEVROLET SECTION

### oTc Chevrolet Fan Pulley Puller



A very practical tool for pulling Fan Pulleys on all model Chevrolets. Slotted block allows wide range of adjustments. Screw reaches through crank hole and fan pulley is pulled without removing radiator. This tool works equally well on all timing gears that are tapped for cap screws. Plated.

This tool is also used in connection with the Gear Puller attachment as illustrated on page 55.

No. 515—Fan Pulley Puller .....	\$3.50
Extra Forcing Screw .....	1.25

## Chevrolet Truck Rear Wheel Bearing Wrench

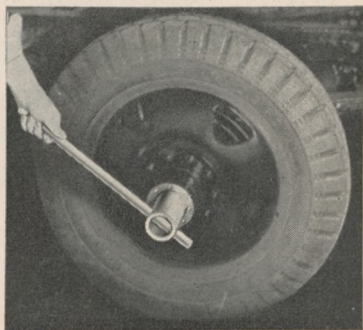
No. 530

In order to remove the lock nut and adjust Chevrolet Truck Rear Wheel Bearings on late model trucks with full floating axles, this wrench is a necessity.

A slotted wrench, accurately milled, built of seamless steel tubing and sufficiently strong for this difficult job. The opposite end of the wrench is drilled with a  $\frac{3}{4}$ " hole to permit the use of a suitable lever. A heat-treated handle of the proper size 20" long will be furnished if desired.

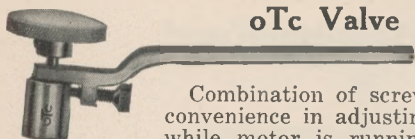
No. 530—Chevrolet Truck Bearing Wrench with handle (as illustrated) .....	\$5.25
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No. 530—Chevrolet Truck Bearing Wrench less handle .....	4.25
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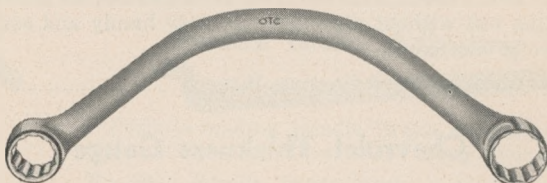
## oTc Valve Tappet Adjusting Tool



Combination of screw driver and twelve point sockets for convenience in adjusting valves on overhead valve motors—while motor is running. Socket detachable—Plated finish.

No. 838—Tappet Adjusting Tool, less socket .....	\$1.75
No. B-218—Special Tappet Socket for late Buicks .....	.50
No. C-220—Special Tappet Socket for late Chevrolets .....	.50

## Chevrolet Starter Wrench



The new Chevrolet Starter Wrench has been designed to handle starters on all model Chevrolets including the 1940 cars.

It has a  $\frac{5}{8}$ " opening on one end to fit starter nuts on models earlier than 1937 and a  $\frac{3}{4}$ " opening on the other end to fit 1937 to 1940 starters.

No. 531—Chevrolet Starter Wrench .....	\$1.50
No. 511—Starter and Manifold Wrench, $\frac{5}{8}$ " x $\frac{3}{4}$ " openings .....	1.35

## Special Screw Drivers



The No. 823 Special Screw Driver is designed to fit the screws on Chevrolet truck instrument panels. The illustration shows a cross sectional view of the bit which is shaped like the figure 8. It is impossible to use an ordinary type of screw driver on this screw and a special driver is necessary.

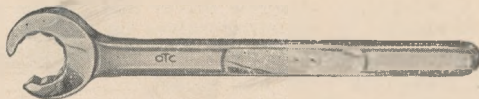
A shorter Screw Driver of the same type is available for use on Chevrolet Radiator Grills. This stubby driver is  $3\frac{1}{4}$ " long overall.

No. 823—Special Screw Driver .....	\$0.75
No. 823-S—Special Screw Driver .....	.65



## Chevrolet Clutch Adjusting Wrench

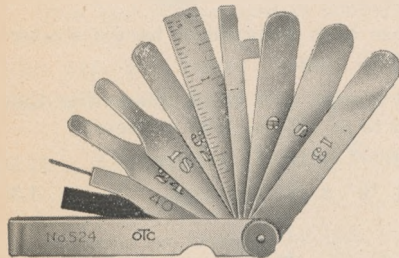
No. 540



The new Chevrolet Clutch Adjusting Wrench is built to adjust the clutch on 1937, '38, '39 and '40 models easily and quickly. Because there is not sufficient room to get a second bite with an open end wrench, a 12 point wrench is necessary. The wrench, as illustrated is milled out to permit applying it to the adjusting nut without difficulty. A very handy and essential wrench for all Chevrolet mechanics.

No. 540—Chevrolet Clutch Adjusting Wrench .....\$1.25

## Chevrolet Thickness Gauge



This newly designed gauge carries a complete combination for Chevrolet mechanics. In addition to a point file, a 3" rule and float level gauge it has a .040 wire point gauge and blades of the following sizes: .006, .008, .013, .018, .024 and .032.

No. 524—Chevrolet Thickness Gauge .....\$1.00

## Chevrolet Pan Screw Driver

$\frac{3}{8}$ " Square Drive

An attachment for use with any speed handle having a  $\frac{3}{8}$ " square connection. An ideal tool for holding and lining up pan bolts when replacing the Chevrolet pan. Simplifies this job a great deal.

Cut-away illustration shows how spring is enclosed so that it does not become filled with grit and grease. Newly designed and greatly improved over other types. 3" over all.

No. 509—Chevrolet Pan Screw Driver Attachment .....\$1.10

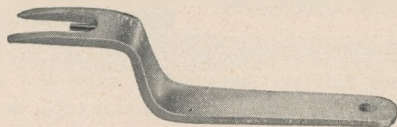
No. 508—Chevrolet Pan Screw Driver Attachment for 1940 .. 1.10





## †Door Handle Escutcheon Plate Tool

No. 973



A most practical tool for depressing the escutcheon plate on door handles and for driving out the pin which holds the handle in place. This tool does both of these jobs with one operation.

Works perfectly on all model cars using a pin with which door handles are held in place.

No. 973—Escutcheon Plate Tool .....\$1.00

## Bendix Brake Adjusting Tool



Permits making Bendix Brake adjustments efficiently and quickly.  $\frac{3}{8}$ " Bits.  $7\frac{1}{2}$ " Long over-all.

No. 841—Bendix Brake Tool .....\$0.75

## oTc Ring Groove Cleaner

A universal tool which will work on pistons ranging in size from the smallest to 6" in diameter. Scraper blades operate at a uniform spring tension and the angle of the cutter provides a non-gouging, non-chat-tering action that permits a smooth, clean finish. Cutter blades are  $\frac{3}{32}$ ",  $\frac{1}{8}$ ",  $\frac{5}{32}$ " and  $\frac{1}{4}$ ". Quickly adjustable and easily operated.

No. 846 Ring Groove Cleaner .....\$1.50

No. 846-A Cutter (only) ..... .50

## oTc Pick-Up Tool



A handy tool in any kit. Serves as a retriever of lost parts that have fallen into inaccessible places. Can be used as a screw starter for replacing and removing valve pins or horseshoe keepers, and has many other uses in a repair shop. Its usefulness far exceeds its low cost.

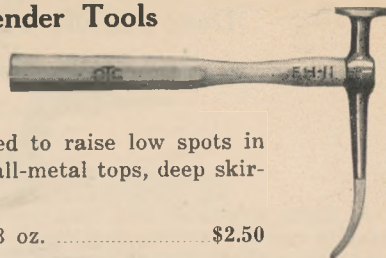
No. 830—Pickup Tool, 6" over-all .....\$0.60

No. 831—Pickup Tool, 9" over-all ..... .70

No. 832—Pickup Tool, 13" over-all ..... .80

## \*Body and Fender Tools

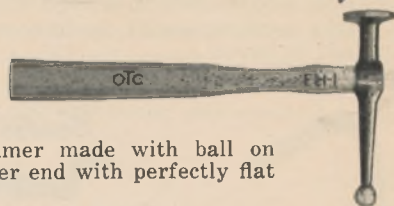
### Long Roof Rail Hammer



Extra long roof rail hammer designed to raise low spots in difficult places—Particularly useful on all-metal tops, deep skirled fenders, and roof rails.

No. FH-11—Fender Hammer, weight 13 oz. ....\$2.50

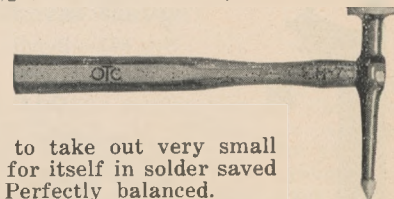
### Ball End Hammer



A perfectly balanced finishing hammer made with ball on one end for raising up low spots. Other end with perfectly flat face.

No. FH-1—Fender Hammer, weight 12½ oz. ....\$2.25

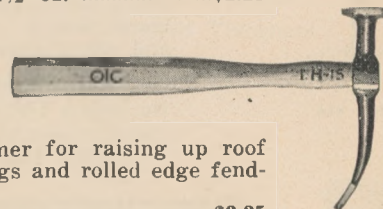
### Low Spot Pick Hammer



An exceptionally useful pick punch to take out very small low spots while filing metal. Will pay for itself in solder saved alone. Also has flat finishing face. Perfectly balanced.

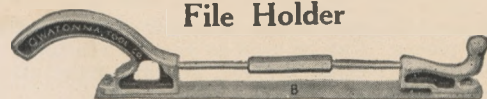
No. FH-7—Fender Hammer, weight 12½ oz. ....\$2.25

### Flat Nose Roof Rail Hammer



Curved shank inside moulding hammer for raising up roof rails and working inside of all mouldings and rolled edge fenders.

No. FH-15—Fender Hammer, weight 12 oz. ....\$2.25



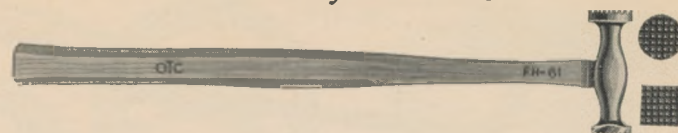
### File Holder

An aluminum file holder which adjusts file to either concave, convex, or flat position as required. Finely built and perfectly designed.

No. B—File Holder .....\$2.25

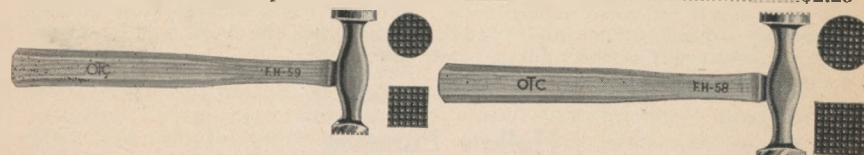
No. F-14—14" Curved Tooth Flexible Vixen Body File ..... 2.25

## New Body Hammers



The long handled hammer particularly is ideal for Turret Top Work. This hammer is 19½" long and weighs only 11½ ounces. Round face is 1¼" in diameter while the square face is 1". Plenty of knuckle room is provided with 1¾" face clearance.

No. FH-61—Turret Top Hammer .....\$2.25



### LIGHT WEIGHT DING HAMMER

Recommended for use on turret tops, fender skirts, trunk lids, door and side panels, etc. The square face is 1" and the diameter of the round is 1¼". Overall length of the hammer is 11½" and it weighs only 8½ ounces. Knuckle clearance is 1¾".

No. FH-59—Hammer .....\$2.00

### NEW DING HAMMER

Exceptionally useful on turret tops, hoods, doors, panels, etc., and especially good on all flat surfaces. This hammer is 11½" long overall and weighs 16 ounces. Square face is 1¾" and diameter of round face is 1¾". Knuckle clearance 2".

No. FH-58—Ding Hammer .....\$2.25

## Dollies



### Anvil Block

A handy general purpose dolly designed to fit the contour of practically all doors and fenders. The small oval works perfectly on outside curves where hammer is used on inside of work.

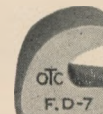
No. FD-4 Anvil Block .....\$3.50



### Crown Block

Designed especially for high crown fenders. The narrow end is useful to back up inside of mouldings. The larger end may be used as a raising block. 3 lbs. 6 oz.

No. FD-6—Dolly .....\$2.25



### Raising Block

A newly designed block for all new rolled edge, late model fenders. Block can be gripped in hand when raising low spots with no danger of striking the fingers.

3 lbs. 6 oz.  
No. FD-7—Dolly .....\$3.00



### Roof Wedge Block

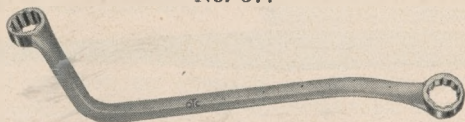
Similar to No. FD-6 but thicker so that it can be used as a backing-up block behind roof rails.

2 lbs. 10 oz.  
No. FD-9—Dolly .....\$2.50



## Chrysler Starter Wrench

No. 577

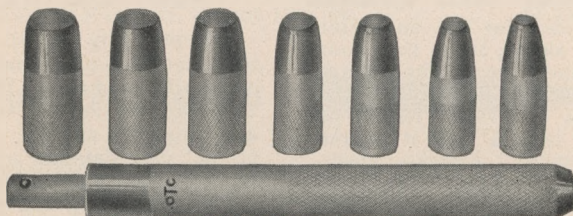


This Wrench is built specially for use on the inaccessible starter bolts on Chrysler, Dodge, DeSoto, Plymouth and Pontiac and works equally well on late models.

Both ends carry a  $\frac{5}{8}$ " twelve point opening but at different angles to permit easy access to these hidden bolts. Actually saves enough time on this job to pay for the wrench and in addition simplifies the work to a great extent. A well built wrench for a tough job.

No. 577—Starter Wrench .....\$1.50

## Hollow Punches



OTC Hollow Punches have been designed to provide a complete range of popular sizes in a compact set. Seven sizes from  $\frac{1}{4}$ " to  $\frac{5}{8}$ " inclusive with a mandrel to fit can easily be held in a small metal case. These Hollow Punches are ideal for cutting gaskets, holes in rubber hose for heater connections, washers, etc.

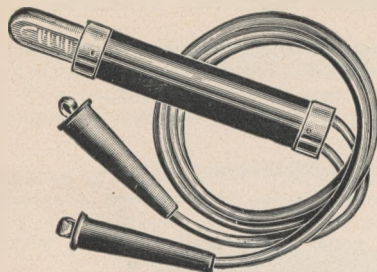
When punching holes in hose or gaskets a wooden block should be used as a base. These punches should not be used for cutting metal.

The mandrel to fit these punches is the same as that used in the No. 816 Bushing Driver Set illustrated on page 106.

No.	Size	Length	Price	No.	Size	Length	Price
HP-8	$\frac{1}{4}$ "	1 $\frac{3}{4}$ "	\$0.40	HP-20	$\frac{5}{8}$ "	1 $\frac{3}{4}$ "	\$0.50
HP-10	$\frac{5}{16}$ "	1 $\frac{3}{4}$ "	.40	No. 813 Mandrel to fit above			
HP-12	$\frac{3}{8}$ "	1 $\frac{3}{4}$ "	.40	sizes .....\$0.75			
HP-14	$\frac{7}{16}$ "	1 $\frac{3}{4}$ "	.45	No. HP-7 Set, 7 Sizes and			
HP-16	$\frac{1}{2}$ "	1 $\frac{3}{4}$ "	.45	Mandrel (Tools only) ..... 3.85			
HP-18	$\frac{9}{16}$ "	1 $\frac{3}{4}$ "	.50	No. 890 Metal Case for Above .70			



## \*oTc Timing Lights



No. 978

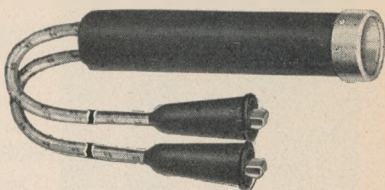
An improved Timing Light which gives three times more light than the average instrument. It has an extended helical neon tube in a dome-type reflector which produces a more concentrated light beam.

The housing is only 1 1/4" in diameter which permits use in close places. Lead wires are 5 feet long and fastening clips are rubber insulated.

No. 978—Improved Timing

Light .....\$4.25

Replacement Tube for No. 978 1.50



No. 977

This light produces a bright, powerful concentrated beam. It can be used in close quarters for timing all distributors correctly to car manufacturer's specifications. Tests are made with engine running and all makes of ignition systems, mechanical and vacuum spark advances can be checked. Complete instructions included with each light.

No. 977—Timing Light .....\$3.90

Replacement Tube for No. 977 1.30



## Pyralin Tip Hammers

A practical and indispensable tool for every service shop. These tips are tough enough to withstand a great deal of abuse yet are soft to eliminate the danger of damaging delicate parts.

These hammers are exceptionally useful in fitting piston pins, tapping valves, gears, bearings, etc., where a hard hammer might easily chip one of these parts.

Tips are replaceable. One tip has a flat surface while the other has a rounded surface. Furnished in two practical sizes.

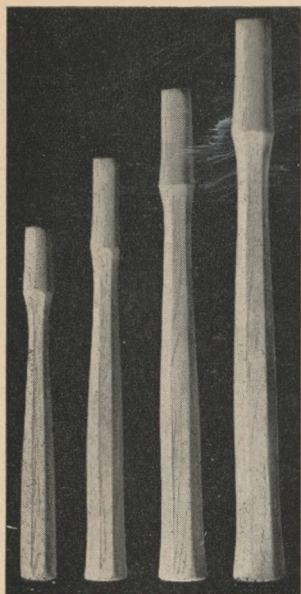
PT-8—Pyralin Tip Hammer, 6 oz. ....\$1.25

PT-16—Pyralin Tip Hammer, 12 oz. .... 1.50

Extra Tip for PT-8, Each ..... .40

Extra Tip for PT-16, Each ..... .50

When ordering please specify rounded tip or flat tip.



## Octagon Hammer Handles

oTc Hammer Handles are all white, perfectly selected, second growth hickory. They are straight grained, finished with a transparent wax and of the best workmanship.

An octagon grip is furnished to provide replacement handles that assure a strong grip regardless of the condition of the hand. A novel and practical feature which makes these handles distinctive.

These well balanced handles are guaranteed to be free from defects and will give exceptional service.

Furnished in four lengths as follows:

Length	Price, each	Per Dozen
10"	\$0.25	\$2.85
12"	.30	2.95
14"	.35	3.15
16"	.40	3.50



## oTc Ball Pein Hammers

Well balanced, sturdy hammers are a necessity in every complete tool box. oTc hammers are drop-forged from Chrome-Vanadium Steel, heat-treated to withstand long use and finely finished. The handles are of first quality, seasoned hickory to assure long life and properly tapered to fit the user's hand.

For the discriminating tool buyer who demands the best in quality and design, oTc Ball Pein Hammers will fill all requirements.

No.	Weight	Length Overall	Price
BP-4	4 oz.	10 "	\$1.00
BP-8	8 oz.	12 "	1.10
BP-16	1 lb.	13½"	1.15
BP-24	1½ lbs.	15½"	1.30
BP-32	2 lbs.	16 "	1.45

Set of 5 Above ..... 6.00





## \*oTc Proven Quality Files



MILL



SQUARE



HALF ROUND



ROUND

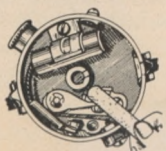


FLAT

oTc offers a variety of high quality files that are particularly adapted to the garage and machine shop. These files represent every advanced feature of the manufacturing and heat-treating. They will actually last longer and file more material than any other file on the market. Built of high grade, refined file steel for long and satisfactory service.

Mill Bastard		Flat Bastard		Sq. Bastard		Rd. Bastard		Half Round	
Length	Price	Length	Price	Length	Price	Length	Price	Length	Price
6" .....	\$.25	8" .....	\$.35	8" .....	\$.35	8" .....	\$.30	8" .....	\$.50
8" .....	.30	10" .....	.45	10" .....	.50	10" .....	.35	10" .....	.65
10" .....	.35	12" .....	.65	12" .....	.65	12" .....	.50	12" .....	.80
12" .....	.50	14" .....	.85	14" .....	.90	14" .....	.70	14" .....	1.10
14" .....	.70								

**Flex-Stone**  
REG. U.S. PAT. OFF.  
**CONTACT POINT DRESSER**



## \*Point Dresser

A flexible, non-conducting abrasive which will smooth down the hardest of tungsten or platinum iridium. It will bend or twist without breaking and get into tight places where other tools will not go.

FS-12—1 Doz. Flex-Stones .....\$1.00

### \*Valve Guide Brushes

Steel Wire Brushes of spiral design which are built accurately to size for various popular makes of cars. These brushes are of rigid construction and will not work loose or pull out of the stem.

They can be used either by hand or in an electric drill. The shank of each brush is  $\frac{1}{4}$ " in diameter. The brush length is  $2\frac{1}{4}$ " and the over-all length of each size is  $9\frac{5}{8}$ ". An indispensable set in every up-to-date shop. Due to the nature of their use these brushes are not guaranteed.

No.	Diameter	Price
V-8	$\frac{1}{4}$ "	\$0.75
V-10	$\frac{5}{16}$ "	.75
V-11	$\frac{11}{32}$ "	.75
V-12	$\frac{3}{8}$ "	.75
V-14	$\frac{7}{16}$ "	.75
V-16	$\frac{1}{2}$ "	.75
V-18	$\frac{9}{16}$ "	.75
V-20	$\frac{5}{8}$ "	.75

V-5 Set of 8 Sizes .....\$6.00

### \*Carbon Cleaning Brushes



Flared



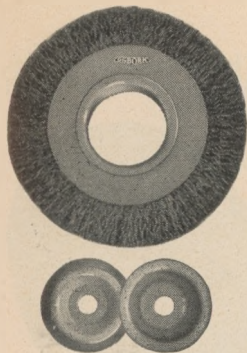
Straight

An ideal brush where speed and good work are required in cleaning carbon. Used in an electric drill, carbon can be removed from cylinder heads and other motor parts in a minimum of time. Made in two types: "Straight" type for valve ports; "Flared" type for cylinder heads and general engine block or parts cleaning.  $\frac{1}{4}$ " shank. Not guaranteed.

No.	Approx. O. D.	Type	Stem Length	Price
B-40	$1\frac{1}{4}$ "	Straight	1"	\$1.25
B-56	$1\frac{3}{4}$ "	Flared	1"	1.25



### \*Wire Wheel Brushes



The oTc Wire Wheel Brush is a complete unit wheel. It is not composed of sections as are wheels of inferior quality. The assembly of steel wire sections is locked into the Hub parts under pressure, making a complete unit. A specially crimped wire is used assuring less breakage and long wear. In addition, the Hub construction permits the use of a maximum amount of wire which gives an exceptional density on the working face of the brush.

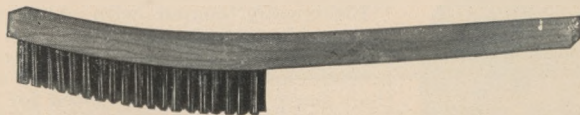
Each wheel has a standard 2" opening and adaptors as illustrated with a required arbor hole size are furnished with each wheel.

When ordering, please specify size of arbor hole required. Adaptors can be furnished with  $\frac{1}{2}$ ",  $\frac{5}{8}$ ", and  $\frac{3}{4}$ " arbor holes. Unless specified,  $\frac{1}{2}$ " arbor adaptors will be furnished. Not guaranteed.

No.	Diameter	Price
4504	4"	\$1.95
4506	6"	2.90
4508	8"	4.00

Extra Adaptors, per pair ..... .25

### Steel Wire Hand Brushes



For general garage use and in cleaning carbon from motor parts these brushes are especially suited. Built of the best quality specially tempered fine carbon steel wire they are of uniform standards and rigidly inspected.

The blocks are well filled, the wires evenly trimmed, and securely fastened in carefully selected and thoroughly seasoned hardwood blocks. Every brush is a carefully balanced efficient tool. Length 14" overall.  $1\frac{1}{8}$ " wide. Length of brush part  $6\frac{1}{4}$ ". Not guaranteed.

No. C-59—Wood Handle Wire Brush ..... \$0.50

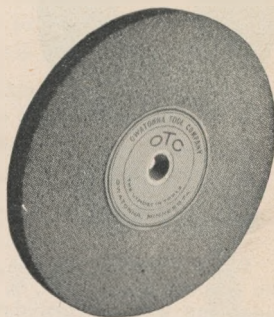


## \*Grinding Wheels

The oTc Abrasive Grinding Wheels were selected because of their outstanding quality and their resistance to hard usage. They are fully vitrified and will give exceptional service under the most trying conditions. This same type of wheel is used for production purposes in our own factory and has been found to handle a greater variety of grinding operations than any similar wheel made.

These wheels are cool, fast-cutting, uniform in structure and adaptable to machine shop work, off-hand tool grinding, garage work, etc.

All oTc Grinding Wheels are Grade "M" and can be furnished in either 60 or 46 grit which are fine or semi-course and most practical for general purposes.  $\frac{5}{8}$ " and  $\frac{3}{4}$ " adaptors can be furnished.  $\frac{1}{2}$ " arbor hole will be furnished unless otherwise specified. Not guaranteed.



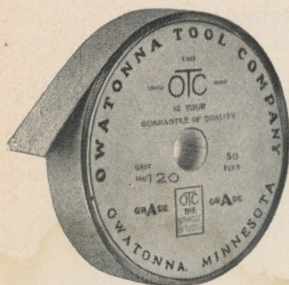
No.	Diameter	Width	Grit	Price
4403	3"	$\frac{1}{2}$ "	80 or 120	\$ .80
4404	4"	$\frac{3}{4}$ "	46	1.15
4406	6"	$\frac{1}{2}$ "	46	1.65
4416	6"	$\frac{1}{2}$ "	60	1.65
4408	8"	1 "	46	3.35

## \*Abrasive Cloth

Conveniently packed in rolls, this Grade A Abrasive Cloth is furnished particularly for the automotive maintenance trade.

Electrically coated with Aluminum Oxide to provide extreme hardness and sharpness and ability to cut metal. The electrostatic process causes the grains to stand on end with their sharp edges fully exposed for better contact with the surface to be polished. This method gives greater efficiency of performance.

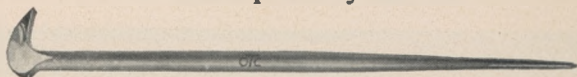
Mounted above the workbench on a spindle permits instant use requiring only the tearing of a strip of sufficient length to fit the work.



Grit No.	Width	Length	Price
80	1"	50'	\$1.50
120	1"	50'	1.50
80	1"	50 yds.	3.25
120	1"	50 yds.	3.25



## Otc Super Pry Bar



A Novel creation in Pry Bars that is meeting popular demand all over the country. It combines the distinct advantage of a lining-up punch with the usefulness of a Pry. An exceptionally useful tool for lifting stuck valves, metal body joints, cylinder heads and for prying loose gears, grease cups, bearings, bushings, ball races, etc.

No. PB-43— $\frac{1}{8}$ " Round—15" long .....\$1.25  
No. PB-45— $\frac{3}{4}$ " Round—18" long ..... 1.75

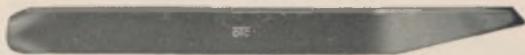
## Otc Assembling Punch



A perfect tool for lining up holes in fenders, frames, motors, etc. This punch has many distinct advantages in that it can be used for punching holes in metal where there is no need for accuracy or a clean cut hole.

No. AP-42—Assembling Punch 14" long .....\$0.95

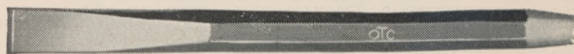
## Otc Rivet Buster



A very practical tool for shearing rivets off from Frames, Ring Gears, etc. These tools have been found to be extremely practical in used car lots and in shops doing wrecking work.

Made from  $\frac{3}{4}$ " square tool steel and tempered all the way through. Plated  
No. RB-40—10" Rivet Buster .....\$1.50  
No. RB-41—14" Rivet Buster ..... 1.75

## Otc Chisels



Otc Chisels are built from a new, close-grained steel which is extremely tough and which readily lends itself to a new and more advanced method of heat-treatment. No finer chisels can be found anywhere. If you try Otc chisels once you will try no other.

No.	Stock	Bit	Length	Price	No.	Stock	Bit	Length	Price
CC-8	$\frac{1}{4}$ "	$\frac{1}{8}$ "	5 "	\$.45	CC-24	$\frac{3}{4}$ "	$\frac{7}{8}$ "	8"	\$.80
CC-10	$\frac{5}{16}$ "	$\frac{3}{8}$ "	5 $\frac{1}{2}$ "	.45	CC-26	$\frac{3}{4}$ "	$\frac{7}{8}$ "	14"	1.85
CC-12	$\frac{3}{8}$ "	$\frac{1}{2}$ "	6 "	.50	CC-27	$\frac{3}{4}$ "	$\frac{7}{8}$ "	18"	2.25
CC-16	$\frac{1}{2}$ "	$\frac{9}{16}$ "	6 $\frac{1}{2}$ "	.60	CC-28	$\frac{7}{8}$ "	1 "	10"	1.50
CC-20	$\frac{5}{8}$ "	$\frac{3}{4}$ "	7 "	.70	CC-32	1 "	1 $\frac{1}{8}$ "	12"	1.75
No. CC-24—Set of First 6 Sizes in Kit									\$3.30



## Mechanic's Flat Chisels



The popularity of oTc Chisels has brought about the expansion of our Chisel line. These new Flat Chisels are built of the finest alloy steels to provide the strength and toughness necessary for long life. With their long flat tapered bits these chisels will work in places where ordinary chisels will not go. You need only use these chisels to understand their superiority over all others.

No.	Stock	Bit	Length	Price
FC-10	$\frac{5}{16}$ "	$\frac{3}{8}$ "	5½"	\$0.50
FC-12	$\frac{3}{8}$ "	$\frac{7}{16}$ "	6½"	.60
FC-16	$\frac{1}{2}$ "	$\frac{9}{16}$ "	6½"	.70
FC-20	$\frac{5}{8}$ "	$\frac{3}{4}$ "	7"	.80
FC-24	$\frac{3}{4}$ "	$\frac{7}{8}$ "	7¾"	.95
FC-25—Set of 5				\$3.55

## oTc Cape Chisel



Cape Chisels are furnished in two popular sizes. A special chisel of this kind is indispensable in the modern shop for cutting in close places where a narrow bit is essential.

No. XC-10— $\frac{5}{16}$ " Octagon Stock, 5" Long, $\frac{1}{4}$ " bit	\$0.55
No. XC-16— $\frac{1}{2}$ " Octagon Stock, 6½" Long, $\frac{3}{8}$ " bit	.75

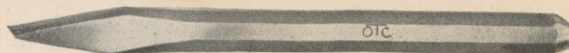
## oTc Diamond Point Chisel



For cutting V shaped grooves, a diamond point chisel is very practical. Used also for many other purposes.

No. DP-16— $\frac{1}{2}$ " Octagon Stock, 6½" Long	\$0.75
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## oTc Round Nose Chisel



The round nose chisel is excellent for cutting or cleaning out oil grooves and is very practical for this purpose. One of the most used special chisels made.

No. RN-16— $\frac{1}{2}$ " Octagon Stock, 6½" Long, $\frac{5}{16}$ " bit	\$0.75
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## oTc Slim Taper Punches

oTc Punches are made under the same specifications as our chisels. Built to withstand continued hard usage, they are heat treated to resist bending, chipping and mushrooming either on the head or on the point. They are worthwhile values that should not be overlooked.



Item No.	Stock	Bit	Length	Price
TP-8	$\frac{1}{4}$ "	$\frac{1}{8}$ "	5"	\$0.45
TP-10	$\frac{5}{16}$ "	$\frac{3}{16}$ "	6"	.45
TP-12	$\frac{3}{8}$ "	$\frac{1}{4}$ "	7"	.45
TP-16	$\frac{1}{2}$ "	$\frac{7}{16}$ "	8"	.60
TP-20	$\frac{5}{8}$ "	$\frac{9}{16}$ "	9"	.70
TP-24	$\frac{3}{4}$ "	$\frac{5}{8}$ "	10"	.80
TP-26	$\frac{3}{4}$ "	$\frac{1}{2}$ "	14"	1.65

TP-25—Set of First 6 Sizes in Kit .....\$3.30

## oTc Combined Punch and Chisel Set

No. PC-25



A combination of No. CC-25 (page 143) and No. TP-25 (above). A combined set of 6 popular sizes of Cold Chisels and 6 popular sizes of Slim Taper Punches, ranging from  $\frac{1}{4}$ " to  $\frac{3}{4}$ ". Twelve tools in a handy leatherette case roll. Kit furnished free with set.

No. PC-25—Combined Punch And Chisel Set .....\$6.60



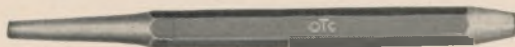
## oTc Pin Punches



One of the most essential tools in automobile work. Hand forged from  $\frac{1}{2}$ " Chrome Vanadium Steel, tempered from end to end, 7" long.

Item No.	Bit	Price	Item No.	Bit	Price
PP-6	$\frac{3}{16}$ "	\$0.80	PP-10	$\frac{1}{8}$ "	\$0.80
PP-8	$\frac{1}{4}$ "	.80	PP-25	Set of 3	2.20

## oTc Starter Punches



Tight pins should be started before using pin punch. Hand forged from  $\frac{1}{2}$ " Chrome Vanadium Steel  $6\frac{1}{2}$ " long.

Item No.	Bit	Price	Item No.	Bit	Price
SP-6	$\frac{3}{16}$ "	\$0.70	SP-10	$\frac{5}{16}$ "	\$0.70
SP-8	$\frac{1}{4}$ "	.70	SP-25	Set of 3	1.90

## oTc Center Punches

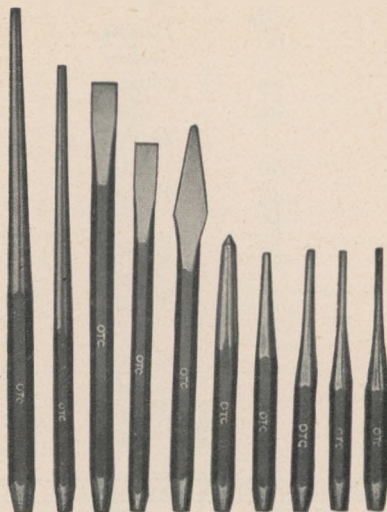


Item No.	Stock	Length	Price
CP-8	$\frac{1}{4}$ "	3"	\$0.35
CP-10	$\frac{1}{8}$ "	$3\frac{1}{2}$ "	.40
CP-12	$\frac{3}{8}$ "	4"	.45
CP-16	$\frac{1}{2}$ "	$4\frac{1}{2}$ "	.50
CP-20	$\frac{5}{8}$ "	5"	.55
CP-24	$\frac{3}{4}$ "	$5\frac{1}{2}$ "	.65

CP-25—Set of 6 in Kit .....\$2.80

## oTc Midget Punch and Chisel Set

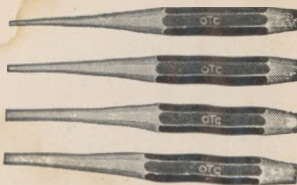
A compact, handy set of small forged tools that every mechanic should have. Consists of one each of the following tools:  $\frac{1}{4}$ " and  $\frac{1}{8}$ " Slim Taper Punches,  $\frac{1}{4}$ " and  $\frac{1}{8}$ " Cold Chisel,  $\frac{1}{8}$ " Cape Chisel,  $\frac{1}{8}$ " Center Punch, Starter Punch, and  $\frac{1}{8}$ ",  $\frac{3}{32}$ " and  $\frac{1}{16}$ " Pin Punches in leatherette roll. These tools are strictly oTc quality hand forged from Chrome Vanadium Steel and heat treated to give maximum service.



No. MPC-25—oTc Midget Punch and Chisel Set .....\$3.80

## oTc Magneto Pin Punches

For use on magneto, generator and other work where small pins must be removed. Hand forged from  $\frac{1}{16}$ " chrome vanadium steel. 3" long over-all. Will stand a lot of punishment.



Item No.	Bit	Price	Item No.	Bit	Price
MP-2	$\frac{1}{8}$ "	\$0.35	MP-5	Starter	\$0.35
MP-3	$\frac{3}{32}$ "	.35	MP-25	Set of 3	1.00
MP-4	$\frac{1}{16}$ "	.35	MP-26	Set of 4	1.35



# OWATONNA MINNESOTA

## STANDARD HEXAGON BOLT AND NUT SIZES

	U. S. Standard		S. A. E. Std.		American Std.
Wrench Openings	Bolts & Nuts	Cap Screws	Screws & Nuts	Bolts & Nuts	Cap Screws
3/8	3/16	3/16		No. 10	
7/16		1/4	1/4	Nos. 12 & 1/4	1/4
1/2	1/4	5/16	5/16		5/16
9/16		3/8	3/8	5/16	3/8
19/32	5/16				
5/8		7/16	7/16	3/8	7/16
11/16	3/8				
3/4		1/2	1/2	7/16	1/2
25/32	7/16				
13/16		9/16		1/2	9/16
7/8	1/2	5/8	9/16	9/16	5/8
15/16			5/8	5/8	
31/32	9/16				
1-		3/4	11/16		3/4
1-1/16	5/8		3/4		
1-1/8		7/8		3/4	7/8
1-1/4	3/4	1-	7/8		
1-5/16				7/8	1-
1-3/8		1-1/8			
1-7/16	7/8		1-		
1-1/2		1-1/4		1-	1-1/8
1-5/8	1-	1-3/8	1-1/8		
1-11/16				1-1/8	1-1/4
1-13/16	1-1/8		1-1/4		
1-7/8				1-1/4	
2-	1-1/4		1-3/8		
2-3/16	1-3/8		1-1/2		
2-1/4				1-1/2	
2-3/8	1-1/2				
2-9/16	1-5/8				
2-5/8				1-3/4	
2-3/4	1-3/4				
2-15/16	1-7/8				
3-				2-	
3-1/8	2-				
3-3/8				2-1/4	
3-1/2	2-1/4				

## SQUARE HEAD BOLTS AND SQUARE NUTS

	U. S. Standard		Std.		American Std.
Wrench Openings	Bolts & Nuts	Cap Screws	Screws & Nuts	Bolts & Nuts	Cap Screws
3/8		1/4	3/8	No. 10	
7/16		5/16	7/16	1/4	1/4
1/2	1/4	3/8	1/2		5/16
9/16		7/16	9/16	5/16	3/8
19/32	5/16				
5/8		1/2	5/8	3/8	7/16
11/16	3/8	9/16			
3/4		5/8	3/4	7/16	1/2
25/32	7/16				
13/16				1/2	9/16
7/8	1/2	3/4	7/8	9/16	5/8
15/16				5/8	
31/32	9/16				
1-			1-		3/4
1-1/16	5/8				
1-1/8				3/4	
1-1/4	3/4	1-	1-1/4		
1-5/16				7/8	
1-3/8		1-1/8			
1-7/16	7/8*				
1-1/2			1-1/2	1-	
1-5/8	1-				



# "Useful Information"

## Fractions of an Inch in Equivalent Decimals

FOR USE IN CONNECTION WITH MICROMETER CALIPERS

Fractions of an Inch		Decimals of an Inch		Fractions of an Inch		Decimals of an Inch
$\frac{1}{64}$	=	.015625		$\frac{33}{64}$	=	.515625
$\frac{1}{32}$	=	.03125		$\frac{17}{32}$	=	.53125
$\frac{3}{64}$	=	.046875		$\frac{35}{64}$	=	.546875
$\frac{1}{16}$	=	.0625		$\frac{9}{16}$	=	.5625
$\frac{5}{64}$	=	.078125		$\frac{37}{64}$	=	.578125
$\frac{3}{32}$	=	.09375		$\frac{19}{32}$	=	.59375
$\frac{7}{64}$	=	.109375		$\frac{39}{64}$	=	.609375
$\frac{1}{8}$	=	.125		$\frac{5}{8}$	=	.625
$\frac{11}{64}$	=	.140625		$\frac{41}{64}$	=	.640625
$\frac{5}{32}$	=	.15625		$\frac{21}{32}$	=	.65625
$\frac{11}{64}$	=	.171875		$\frac{43}{64}$	=	.671875
$\frac{3}{16}$	=	.1875		$\frac{11}{16}$	=	.6875
$\frac{13}{64}$	=	.203125		$\frac{45}{64}$	=	.703125
$\frac{7}{32}$	=	.21875		$\frac{23}{32}$	=	.71875
$\frac{15}{64}$	=	.234375		$\frac{47}{64}$	=	.734375
$\frac{1}{4}$	=	.250		$\frac{3}{4}$	=	.750
$\frac{17}{64}$	=	.265625		$\frac{49}{64}$	=	.765625
$\frac{9}{32}$	=	.28125		$\frac{25}{32}$	=	.78125
$\frac{19}{64}$	=	.296875		$\frac{51}{64}$	=	.796875
$\frac{5}{16}$	=	.3125		$\frac{13}{16}$	=	.8125
$\frac{21}{64}$	=	.328125		$\frac{53}{64}$	=	.828125
$\frac{11}{32}$	=	.34375		$\frac{27}{32}$	=	.84375
$\frac{23}{64}$	=	.359375		$\frac{49}{64}$	=	.859375
$\frac{3}{8}$	=	.375		$\frac{7}{8}$	=	.875
$\frac{25}{64}$	=	.390625		$\frac{57}{64}$	=	.890625
$\frac{13}{32}$	=	.40625		$\frac{29}{32}$	=	.90625
$\frac{27}{64}$	=	.421875		$\frac{59}{64}$	=	.921875
$\frac{7}{16}$	=	.4375		$\frac{15}{16}$	=	.9375
$\frac{29}{64}$	=	.453125		$\frac{61}{64}$	=	.953125
$\frac{15}{32}$	=	.46875		$\frac{31}{32}$	=	.96875
$\frac{31}{64}$	=	.484375		$\frac{63}{64}$	=	.984375
$\frac{1}{2}$	=	.500		1 in.	=	1.000



## Drill and Tap Sizes

### MACHINE SCREW THREADS

Screw Size	Thread	Drill
No. 4	40	$\frac{3}{32}$ "
No. 6	32	$\frac{7}{64}$ "
No. 6	40	$\frac{7}{64}$ "
No. 8	32	$\frac{9}{64}$ "
No. 8	36	$\frac{9}{64}$ "
No. 10	24	$\frac{5}{32}$ "
No. 10	32	$\frac{5}{32}$ "
No. 12	24	$\frac{11}{32}$ "

### NATIONAL FINE STANDARD (formerly S. A. E.)

Screw Size	Thread	Drill
$\frac{1}{4}$ "	28	$\frac{7}{32}$ "
$\frac{5}{16}$ "	24	$\frac{17}{64}$ "
$\frac{3}{8}$ "	24	$\frac{21}{64}$ "
$\frac{7}{16}$ "	20	$\frac{27}{64}$ "
$\frac{1}{2}$ "	20	$\frac{17}{16}$ "
$\frac{5}{8}$ "	18	$\frac{17}{16}$ "
$\frac{3}{4}$ "	18	$\frac{23}{16}$ "
$\frac{7}{8}$ "	16	$\frac{23}{16}$ "
1"	14	$\frac{29}{16}$ "
$1\frac{1}{8}$ "	12	$1\frac{1}{4}$ "
$1\frac{1}{4}$ "	12	$1\frac{1}{4}$ "
$1\frac{1}{2}$ "	12	$1\frac{5}{8}$ "

### NATIONAL COURSE STANDARD (formerly U. S. S.)

Bolt Size	Thread	Drill
$\frac{1}{4}$ "	20	$\frac{11}{16}$ "
$\frac{5}{16}$ "	18	$\frac{11}{16}$ "
$\frac{3}{8}$ "	16	$\frac{11}{16}$ "
$\frac{7}{16}$ "	14	$\frac{11}{16}$ "
$\frac{1}{2}$ "	13	$\frac{13}{16}$ "
$\frac{9}{16}$ "	12	$\frac{13}{16}$ "
$\frac{5}{8}$ "	11	$\frac{13}{16}$ "
$\frac{3}{4}$ "	10	$\frac{13}{16}$ "
$\frac{7}{8}$ "	9	$\frac{13}{16}$ "
1"	8	$\frac{13}{16}$ "
$1\frac{1}{4}$ "	7	$1\frac{1}{8}$ "

### PIPE THREAD

Pipe Size	Thread	Drill
$\frac{1}{8}$ "	27	$\frac{31}{64}$ "
$\frac{1}{4}$ "	18	$\frac{23}{64}$ "
$\frac{3}{8}$ "	18	$\frac{23}{64}$ "
$\frac{1}{2}$ "	14	$\frac{23}{64}$ "
$\frac{3}{4}$ "	14	$\frac{31}{64}$ "
1"	$11\frac{1}{2}$	$1\frac{3}{16}$ "



## Servicing Shop Motor

## PISTON CLEARANCE

Standard clearance allowance for grey iron piston skirts is .00075" (three-quarter thousandth) per inch of piston diameter for pleasure car motors. Applied to different piston diameters clearances are as follows:

2½" piston allow .002 " clearance

3 " piston allow .0025" clearance

3½" piston allow .003 " clearance

4 " piston allow .0035" clearance

Many authorities recommend a clearance of .001" per inch of piston diameter on pistons of motors subject to abusive treatment such as taxicabs, trucks and tractors, unless their motors are thoroughly run-in. Applied to a 4" dia. truck piston, clearance allowance is .004". In extreme cases, when heavy duty motors are subjected to constant high speed, an additional .001" clearance should be added to the total diameter clearance.

Upper piston lands (sections above and between rings) must have additional clearance. Top land should have .0035" clearance per inch of piston diameter, second land .003" per inch, and the third land .002" per inch of diameter. Unless this clearance is allowed extreme heating may cause piston head to seize and pull off. In fitting aluminum or alloy pistons piston maker's instructions must be followed.

Aluminum alloy split skirt piston clearance is the same as for cast iron pistons, except where special clearance is specified by maker.

When split skirt pistons are used it is important that the split be installed on the driver's side of the

## Reconditioning Data

motor, as this is the side of minimum thrust.

Cylinder bores must be refinished to within one thousandth of an inch (.001") for round and straight. This means half a thousandth (.0005") plus or minus a given size. Connecting rods and pistons must be in perfect alignment—at absolute right angles with crankshaft and cylinder. Always use a connecting rod and piston aligner.

## PISTON PIN CLEARANCE

Allow .005" to .00075" (one-half to three-quarter thousandth inch) clearance for oil-film when fitting pins to reamed holes. Pins bearing in cast iron pistons should have no "drag," but should turn almost free. Oil thoroughly before assembling.

## BEARING CLEARANCE

Do not assemble main and crank-pin bearings tight to shaft but in fitting allow .001" clearance for each inch of pin diameter. Ream solid bearings .001" to .0015" oversize. End play on main bearings .004" to .005" for regular sized motors and about .010" on big trucks and tractors.

## CYLINDER GAUGING

A cylinder measuring or indicating gauge is an instrument for testing the straightness and roundness of cylinders. It indicates in thousandths of an inch the amount of taper and out-of-roundness. It measures cylinder diameters before and after reconditioning and compares the sizes of all cylinders in a block.

An inside micrometer is used to determine what size pistons will fit the hole, or to determine the actual cylinder diameter.

CYLINDER BORE	GAP	CYLINDER BORE	GAP
2¾—2⅞	.015	3⅞—4	.021
2⅞—3⅞	.016	4⅞—4⅞	.022
3⅞—3⅞	.017	4¼—4¾	.023
3⅞—3⅞	.018	4⅞—4⅞	.024
3½—3⅞	.019	4⅞—4¾	.025
3⅞—3⅞	.020	4⅞—4⅞	.026

## Wrist Pin and Suggested Reamer Sizes

Make	Style	Motor-Model	Year	Wrist Pin Diameter	Use Super Pilot Reamer
ALLIS-CHALMERS	Tractor	V, VC	1937-1935	1.312	R-4852
	U, UC, M, WM, U-40, UM		1939-1934	1.312	R-4852
		W, WC	1939-1930	.989	R-3032
	L, KO, LO, E-35, K-35, 50		1934-1929	1.500	R-4852
AUBURN	Car	6 & 8 cyl.	1937-1934	.875	R-2830
BUICK	Car	60, 80, 90	1940-1933	.875	R-2830
		60, 50, 40	1940-1933	.8125	R-2628
		8 cyl.	1940-1934	.874	R-2830
CADILLAC	Car	12 cyl.	1936-1934	.8555	R-2628
CATERPILLAR	Tractor	28	1936-1934	1.500	R-4852
		22	1936-1934	1.218	R-3640
CHEVROLET	Car		1940-1937	.865	R-2628
			1936-1929	.990	R-3032
	Truck		1940-1937	.865	R-2628
			1936-1929	.990	R-3032
CHRYSLER	Car	6 & 8 cyl.	1940-1931	.860	R-2628
DE SOTO	Car		1939-1931	.860	R-2628
DODGE	Truck		1940-1931	.860	R-2628
FEDERAL		KV, K-50-51-52,	1936-1934	1.000	R-3234
		K-70-71-72	1940-1938	1.125	R-3640
		ML-MK, RK, RP	1939-1934	.860	R-2628
	Truck	All others	1938-1936	1.000	R-3234
		Herc. OOB-	1940-1934	1.000	R-3234
		JXA-JXB-JXC	1936-1934	1.000	R-3234
FORD	Car & Truck	Wauk, MZ-MK	1939-1935	1.375	R-4448
		Wauk, SRK	1941-1932	.750	R-2426
		V-8	1940-1937	.6875	R-2224
		60	1932-1928	1.000	R-3234
G. M. C.	Truck	A, AA, B, BB	1940-1934	.855	R-2628
		213, 207, 230	1936-1935	.875	R-2830
		257	1938-1928	.9375	R-3032
		239, 286, 257	1938-1933	1.250	R-4044
		400	1939-1930	.750	R-2426
HUDSON	Car		1940-1932	1.000	R-3234
INDIANA	Truck	Herc. JXB-JXC	1937-1932	1.125	R-3640
		Herc. WXC	1938-1932	1.250	R-4044
		Herc. YXC	1939-1933	.9375	R-3032
	Truck	HD, HD-3	1937-1933	.919	R-2830
INTERNATIONAL		FAB-241, FAB-259,	1934-1926	.875	R-2830
		FAB-2-3	1940-1930	1.109	R-3436
		Lyc. 4SL, 4SLH, SAH	1939-1937	.874	R-2830
		FRB, FBB3	1940-1936	.750	R-2426
LA SALLE	Car	Zephyr	1932-1922	.875	R-2830
LINCOLN	Car	Regular	1940-1934	1.125	R-3640
MACK	Truck	CE, CT	1937-1922	1.3125	R-4044
		AB, BK	1937-1929	1.000	R-3234
McCORMICK-DEERING		RG, BL	1937-1929	1.000	R-3234
	Tractor	22-36, 30	1935-1932	1.484	R-4448
		F-20, F-30, I-30, T-20	1938-1924	1.299	R-4044
		F-20, F-30, 20-30, I-30	1939-1931	1.299	R-4044
		F-12, I-12, O-12, W-12	1939-1934	.919	R-2830
NASH	Car	F-12, F-14	1939-1934	.919	R-2830
OLDSMOBILE	Car	6 & 8 cyl.	1940-1933	.875	R-2830
	Car	6 & 8 cyl.	1940-1931	.855	R-2628
PACKARD	Car		1940-1925	.875	R-2830
			1940-1933	.860	R-2628
			1932-1929	.749	R-2628
PLYMOUTH	Car		1940-1933	.9375	R-3032
			1932-1926	1.0625	R-3436
			1940-1932	.875	R-2830
PONTIAC	Car	6 & 8 cyl.	1938-1932	.750	R-2426
STUDEBAKER	Car	6 & 8 cyl.			
TERRAPLANE	Car	6 & 8 cyl.			

## King Pin Bushing and Suggested Reamer Sizes

Make	Style	Motor-Model	Year	King Pin Bush. Inside Diameter	Use Super Pilot Reamer
AUBURN	Car		1936-1934	.748	R-2426
			1940-1936	1.062	R-3436
			1940-1934	.862	R-2628
			1935-1934	1.000	R-3234
BUICK	Car	60, 80, 90	1938-1939	.875	R-2830
		40	1939-1936	.863	R-2628
		90	1938-1937	.866	R-2830
		80, 90	1940-1937	.734	R-2224
CADILLAC	Car	8 cyl.	1936-1935	.734	R-2224
CHEVROLET	Car	Master Deluxe	1936-1935	.921	R-2830
		Master	1940-1932	.734	R-2224
	Truck	Master-Std.	1940-1934	1.000	R-3234
		1 1/2 Ton	1936-1935	.937	R-3032
CHRYSLER	Car	1 1/2 Ton	1940-1934	.734	R-2224
		Airflow	1936-1935	1.000	R-3234
		Airstream 8,	1939-1935	.937	R-3032
			1936-1935	.937	R-3032
DE SOTO	Car	Airflow	1940-1937	.796	R-2426
		S3, S5, S6	1940-1935	.796	R-2426
			1937-1934	.8125	R-2628
			1938-1935	1.234	R-3640
DODGE	Car		1936-1935	.796	R-2426
DODGE	Truck	K50V-K62V	1938-1933	.875	R-2830
		KC, KCL			
		K22V, K48V			
		TC, TD, TD-15			
FORD	Truck	TD-20, TD-21	1940-1933	.796	R-2426
			1941-1928	.812	R-2628
			1940-1937	.812	R-2628
			1939-1930	1.003	R-3234
G. M. C.	Truck	60	1940-1941	1.125	R-3640
		1 1/2 Ton	1939-1928	.812	R-2628
		N.B. 1 1/2 Ton	1938-1932	1.109	R-3234
		1/2 Ton	1940-1937	.945	R-3032
HUDSON	Truck	1 1/2, 2, 3 Ton	1936-1935	.861	R-2628
INTERNATIONAL	Car		1935-1929	1.608	R-4852
			1935-1929	1.359	R-4448
			1935-1931	.986	R-3032
			1939-1931	.863	R-2628
LA SALLE	Car		1941-1937	.9375	R-3032
LINCOLN ZEPHYR	Car		1932-1927	.982	R-3032
LINCOLN	Car	Regular	1930-1916	1.248	R-4044
MACK	Truck	1, 2 1/2 Ton	1940-1936	.858	R-2628
NASH	Car	8 cyl.	1940-1937	.814	R-2628
		6 cyl.	1940-1937	.8593	R-2628
		6 & 8	1936-1927	.863	R-2628
		120	1939-1935	.866	R-2628
OLDSMOBILE	Car		1940-1935	.796	R-2426
PACKARD	Car		1934-1933	.732	R-2224
			1934	.795	R-2426
			1932-1929	.748	R-2426
			1940-1937	.862	R-2628
PLYMOUTH	Car	PC, PD, PF, PG	1936-1929	.734	R-2224
		PE	1932	.863	R-2628
			1939-1934	.8125	R-2628
			1936-1933	.7495, .752	R-2426
PONTIAC	Car	6 & 8			
STUDEBAKER	Car	6 cyl.			
		8 cyl.			
		6 & 8 cyl.			
TERRAPLANE	Car				



## USEFUL INFORMATION

To find the circumference of a circle, multiply the diameter by 3.1416.

To find the diameter of a circle, multiply the circumference by .31831.

To find the area of a circle, multiply the square of the diameter by .7854.

To find the surface of a ball (sphere), multiply the square of the diameter by 3.1416.

To find the cubic inches (volume) in a ball, multiply the cube of the diameter by .5236.

Doubling the diameter of a pipe increases its capacity four times.

The radius of a circle  $\times$  6.283185 equals the circumference.

The square of the circumference of a circle  $\times$  .07958 equals the area.

Half the circumference of a circle  $\times$  half its diameter equals the area.

The circumference of a circle  $\times$  .159155 equals the radius.

The square root of the area of a circle  $\times$  .56419 equals the radius.

The square root of the area of a circle  $\times$  1.12838 equals the diameter.

To find the area of a square or the section of a flat bar, or of a rectangle, multiply the width by the thickness. In a square these dimensions are the same.

To find the area of an octagon, multiply the square of the diameter of the inscribed circle by .828.

To find the area of a regular hexagon, multiply the square of the diameter of the inscribed circle by .866.

To find the area of a triangle, multiply the width of the base by one-half of the perpendicular height.



## Grinding Drills

Only properly ground drills can be expected to give satisfactory service and efficiency. Investigation shows that a great deal of drill trouble is not the fault of the drills, but is due to improper grinding. Drills should be ground carefully and accurately to insure a fast cutting, long life drill. Do not overheat in grinding, dip in water frequently when grinding.

We present here a few simple rules for grinding, which, if carefully followed will insure satisfactory results.

1. Both cutting edges should be inclined at the same angle with the axis of the drill and should be of equal length. A point angle of 59 degrees is generally considered the best angle for ordinary purposes. (Fig. 1) Use a protractor to check this angle.

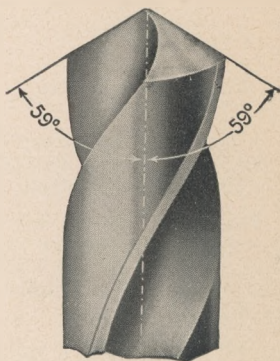


Figure No. 1

2. The angle of lip clearance or contour of surface back of cutting edges should be identical on both sides. An angle of 12 degrees (Fig. 2) combined with the center angle of 130 degrees (Fig. 3), giving a constantly increasing clearance towards the center, has also been found to be best under average circumstances.

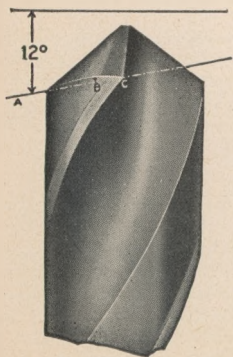


Figure No. 2

3. Both cutting edges should be exactly the same length. Use a steel rule to check this measurement.

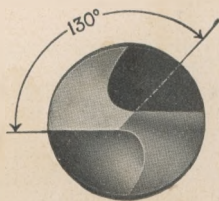
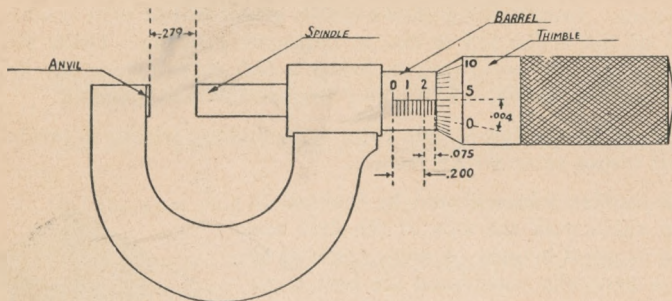


Figure No. 3

## How To Read a Micrometer



Every good mechanic should have a good "mike" and should be able to read it quickly and accurately. Before you can do this, you must thoroughly understand the principle on which it works.

The "mike" Screw has 40 threads to the inch. One complete turn of the Thimble (to which the Screw is attached) advances the Spindle  $\frac{1}{40}$  of an inch.  $\frac{1}{40}$  of an inch equals 25 thousandths (.025). So obviously each complete turn on the Thimble advances the Spindle 25 thousandths of an inch (.025).

The Thimble has a scale on its circumference with 25 divisions, each division obviously records  $\frac{1}{25}$  of a turn on the screw. Now if one complete turn of the Thimble advances the Spindle 25 thousandths (.025) then  $\frac{1}{25}$  of a turn advances it  $\frac{1}{25}$  of 25 thousandths or 1 thousandth (.001) of an inch. Every 5th one of these graduations are numbered thus—0, 5, 10, 15, 20.

The Barrel has a scale marked along its side which is exactly 1" long. This scale has 40 divisions. These divisions are spaced 25 thousandths (.025) apart. Every 4th one is numbered 0, 1, 2, 3, etc. Obviously 4 divisions equal  $4 \times .025$  or 100 thousandths (.100). So the numbers on the scale on the side of the Barrel are really 100 thousandths (.100), 200 thousandths (.200), 300 thousandths (.300), etc. These numbers greatly simplify the reading of the "mike."

Example: Notice the largest figure visible on the side of the barrel. In the above cut the figure is 2, this means 200 thousands. Next count the number of divisions visible between the 2 line and the end of the Thimble. In the above cut there are 3 and as each of these divisions means 25 thousandths, we multiply  $.025 \times 3 = 75$  thousandths. Add  $.200 + .075 = .275$  thousandths, which is the reading on the barrel. Add to this the reading on the Thimble which in the above cut is 4 thousandths, thus  $.275 + .004 = .279$  thousandths, (.279), which is the correct reading of the "mike" in the above illustration.





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